

Vita of
JOHN LEE BERKLEY
Professor and Chair, Department of Geosciences
SUNY Fredonia

PERSONAL DATA:

Born May 17, 1948, Lawrence, Kansas; married, two children;
Home address: 348 Temple St., Fredonia, NY 14063;
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EDUCATION: B.S. Geology - University of Minnesota, Duluth - 1970
M.S. Geology - University of Missouri, Columbia - 1972
Ph.D. Geology (Dept. of Geology & Inst. of Meteoritics)- University of New Mexico - 1977

Post-graduate:
Post Doctoral Fellowship - Institute of Meteoritics (UNM) - 1977-1979
Research Associate - Lunar and Planetary Lab (Univ. AZ) - 1979-1982

HONORS/ AWARDS/GRANTS:

Grant for thesis work - Minnesota Geological Survey - 1971
Student fellowship to present paper, Tours, France - Meteoritical Society - 1975
Penrose Grant - Geological Society of America - 1975
Albuquerque Gem and Mineral Club fellowship - 1975
Member - Phi Kappa Phi Honor Society - 1978
Grant for meteorite research (NAG9-82) - NASA - 1984-1992
SUNY, Fredonia Research and Creativity Grant to study ureilite meteorites - 1985
SUNY, Fredonia Research and Creativity Grant to study K-bentonite ash deposits - 1995

LEADERSHIP POSITIONS:

President - Fredonia chapter, Sigma Xi Research Society, 1986-1987
Chair - Library Advisory Committee, 1988-1994
Chair - Academic Standards Subcommittee, 1991-present
Chair - Personnel Committee, Chaut. Day Care, Inc., 1991-1992
Chair - Dean Search Committee (Nat. & Social Sci. Division) - 1997-1998, 2004
Co-Chair (w/J. Burke) Evaluation of Teaching Committee - 2001-2002

POSITIONS HELD:

Chairperson, Dept. Of Geosciences - SUNY, College at Fredonia 1997-present
Interim Chair, Dept. of Geosciences - SUNY, College at Fredonia fall 1994
Acting Dean, Natural & Social Sci. Div. - SUNY College at Fredonia - 1992-1993
Acting Associate Dean - SUNY College at Fredonia - 1991-1992
Acting Assistant Dean - SUNY College at Fredonia - 1990 -1991
Associate Professor - SUNY College at Fredonia - 1988 - present
Assistant Professor - SUNY College at Fredonia - 1982 - 1988
Research Associate - University of Arizona - 1979 - 1982
Postdoctoral Fellow - University of New Mexico - 1977 - 1979
Research Assistant - University of New Mexico - 1973 - 1977
Engineering aide - M. B. Associates, San Ramon, Ca. 1972 - 1973
Graduate Teaching Assistant - University of Missouri - 1970 - 1972
Undergraduate Teaching Assistant - University of Minnesota - 1969 - 1970

PROFESSIONAL SOCIETIES:

Geological Society of America
American Geophysical Union
Mineralogical Society of America
Meteoritical Society

PROFESSIONAL EXPERIENCE:

Electron microprobe/Scanning electron microscope studies of terrestrial and extraterrestrial (lunar & meteorite) rock samples (1971 to present); Most recently at Johnson Space Center, Houston, summers of 1998 and 1999

Universal-stage petrographic mineral fabric studies of achondritic meteorites

Instrumental neutron activation analysis of DSDP basalts (under supervision of Dr. R. A. Schmitt, Oregon State University), and meteorites (and with Dr. W. V. Boynton, University of Arizona, Lunar & Planetary Laboratory)

Geological field mapping of Precambrian greenstone terrains (Minnesota Geological Survey, 1969; M.S. Thesis, Geology of Deer Lake Mafic-ultramafic complex, Itasca Co., Minn., 1972); as exploration geologist for Cu-Ni, U. S. Steel Corp., northeast Minn., summer, 1970;

Geological field mapping of granite-pelitic metamorphic terrain (Placitas-Juan Tabo area, Sandia Mts., N.M.), 1974-1975

TEACHING EXPERIENCE:

University of Minnesota
Physical geology lab - - 1969 - 1970

University of Missouri
Physical geology and Optical Mineralogy labs - 1970 - 1972

University of New Mexico
Physical geology lab - fall, 1973
Physical Geology lecture course - summer, 1979

SUNY College at Fredonia
Igneous/metamorphic/sedimentary Petrology;
Ore deposits (economic geology);
Environmental geology;
Planetary geology (Moons and Planets);
Mini-courses in volcanology and meteorites;
Field geology;
Teaching Earth Science in Elementary and Secondary Classrooms (summer course, 1985; 2004, 2009)
Honors course in cosmology (Human Destiny in the Cosmos; 1986);
Honors course in science history (Greatest Scientific Discoveries, 1999);
Physical and General geology;
Maps Interpretation laboratory;
Writing in the Geosciences;
Cartography

LANGUAGES: Spanish (spoken and written, fair)
Italian (spoken and written, intermediate)
French (reading, fair; spoken and writing, disaster)

CURRENT RESEARCH INTERESTS:

Geochemistry and petrology of achondritic meteorites (Martian, HED, Ureilites, Brachinites)
Bio-cementation of clastic sedimentary rocks as Martian analogs

OTHER INTERESTS/ACTIVITIES:

Hobbies: landscape gardening; music (guitar/vocal); photography; History (Civil War period and WW II [model aircraft])
Private pilot (single engine land) Cert. no. 307542515, issued 10/18/79
Active sports: Ice Hockey 1989-2007

BIBLIOGRAPHY: (updated 2009)

Refereed articles:

- Berkley, J.L., Brown, H.G. IV, Keil, K., Carter, N.L., Mercier, J-C., Huss, G. (1976) The Kenna ureilite: Ultramafic rock with evidence for igneous, metamorphic, and shock origin: *Geochim. Cosmochim. Acta* **40**, 1429-1436.
- Prinz, M., Keil, K., Hlava, P., Berkley, J.L., Gomez, G.B. and Curvello, W.S. (1977) Studies in Brazilian meteorites III: The Angra dos Reis meteorite: *Earth Planet. Sci. Lett.* **35**, 317-330.
- Berkley, J.L. and Himmelberg, G.R. (1978) The Deer Lake Peridotite-gabbro Complex, Minnesota: Cumulus mineralogy and petrology: Minnesota Geol. Survey, Reports of Investigations, **20A**, A1-A18.
- Fodor, R.V., Berkley, J.L., Keil, K., Husler, J.W., Ma, M.S. and Schmitt, R.A. (1979) Petrology of basalt drilled from the Galapagos spreading center, Project Leg 54: in Rosendahl, B.R., Hekinian, R. et al., Initial Reports of the Deep Sea Drilling Project, v. **LIV**, Washington (U.S. Gov. Printing Off.), 737-749.
- Taylor, G.J., Keil, K., Berkley, J.L., Fodor, R.V. and Fruland, R.M. (1979) The Shaw meteorite: History of a chondrite consisting of impact-melted and metamorphic lithologies: *Geochim. Cosmochim. Acta* **43**, 323-337.
- Berkley, J.L., Taylor, G.J. and Keil, K. (1979) Fluorescent accessory phases in the carbonaceous matrix of ureilites: *Geophys. Res. Lett.* **5**, 1075-1078.
- Berkley, J.L., Keil, K., Gomes, C.B. and Curvello, W.S. (1978) Studies of Brazilian meteorites XII. Mineralogy and petrology of the Santa Barbara Rio Grande do Sul chondrite: *An. Acad. Brasil.Cienc.* **50**, 191-196.
- Berkley, J.L. and Callender, J.F. (1980) Precambrian metamorphism in the Placitas-Juan Tabo area, N.W. Sandia Mountains, New Mexico: in Guidebook of Santa Fe Country; New Mexico Geol. Soc. 30th Annual Field Conference, 181-188.
- Keil, K., Berkley, J.L. and Fuchs, L.H. (1980) Suessite (Fe,Ni)₃(Si,P): A new mineral in the North Haig ureilite: *Amer. Mineral.* **67**, 126-131.
- Berkley, J.L., Taylor, G.J., Keil, K., Harlow, G. and Prinz, M. (1980) The nature and origin of ureilites: *Geochim. Cosmochim. Acta* **44**, 1579-1597.
- Berkley, J.L., Keil, K., and Prinz, M. (1980) Comparative petrology and origin of Governador Valadares and other nakhlites: in Proceedings of the Eleventh Lunar and Planetary Sci. Conf., Lunar and Planetary Institute, Houston, 1089-1102.
- Berkley, J.L. and Keil, K. (1981) Olivine orientation in the ALHA77005 achondrite: *Amer. Mineral.* **66**, 1233-1236.
- Berkley, J.L. (1981) Mars weathering analogs: Secondary mineralization in Antarctic basalts: in Proceedings of the Twelfth Lunar and Planetary Sci. Conf., Lunar and Planetary Institute, Houston, 1481-1492.
- Berkley, J.L. and Drake, M.J. (1981) Weathering on Mars: Terrestrial analog studies: *Icarus* **45**, 231-249.
- Ripley, E.M., Rao, B. and Berkley, J.L. (1982) Mineralogical and chemical variations within layered sills of the Deer Lake complex, Minnesota: *Contrib. Mineral. Petrol.* **80**, 230-239.
- Berkley, J.L. and Jones, J.H. (1982) Primary igneous carbon in ureilites: Petrological implications: in Proceedings of the Thirteenth Lunar and Planetary Sci. Conf., part 1, *Jour. Geophys. Res.* **87**, suppl., A353-A364.
- Berkley, J.L., Taylor, G.J., Keil, K., Harlow, G.E. and Prinz, M. (1983) The nature and origin of ureilites (reply to a comment by F. Begemann and U. Ott): *Geochim. Cosmochim. Acta* **47**, 979-980.

- Berkley, J.L. (1986) Four Antarctic ureilites: Petrology and observations on ureilite petrogenesis: *Meteoritics* **21**, 169-189.
- Goodrich, C.A. and Berkley, J.L. (1986) Primary magmatic carbon in ureilites: Evidence from cohenite-bearing metallic spherules: *Geochim. Cosmochim. Acta* **50**, 681-691.
- Goodrich, C.A., Jones, J.H. and Berkley, J.L. (1987) Origin and evolution of the ureilite parent magmas: Multi-stage igneous activity on a large parent body: *Geochim. Cosmochim. Acta* **51**, 2255-2273.
- Goodrich, C.A., Keil, K., Berkley, J.L., Laul, J.C., Smith, M.R., Wacker, J.F., Clayton, R.N. and Mayeda, T.K. (1988) Roosevelt County 027: A low-shock ureilite with interstitial silicates and high noble gas concentrations: *Meteoritics* **22**, 191-218.
- Berkley, J. L. and Boynton, N. J. (1992) Minor/major element variation within and among diogenite and howardite orthopyroxenite groups: *Meteoritics* **27**, 378-394.
- Treiman, A. H. and Berkley, J. L. (1994) Igneous Petrology of the new ureilites NOVA 001 and Nullarbor 010: *Meteoritics* **29**, 843-848.
- Berkley, J. L. and Baird, G. C. (2002) Calcareous K-bentonite deposits in the Utica Shale and Trenton Group (Middle Ordovician), of the Mohawk Valley, New York State. *Physics and Chemistry of the Earth* **27**, 265-278.
- Mittlefehldt, David W., Bogard, D, Berkley, J. and Garrison, D. (2003) Brachinites: Igneous rocks from a differentiated asteroid: *Meteoritics and Planetary Science* **38**, 1601-1625.

Abstracts:

- Berkley, J.L. (1972) The Deer Lake gabbro-peridotite complex, Itasca Co., Minnesota: (abst.) 18th Ann. Meeting, Inst. of Lake Superior Geology, Houghton, Mi., paper no. 1.
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- Berkley, J.L., Callender, J.F. and Keil, K. (1976) Placitas-Juan Tabo contact aureole: Evidence for complex dynamothermal evolution through time: (abst.) *Geol. Soc. Amer. Ann. Meeting, Denver*, **8**, no. 6, 776.
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- Prinz, M., Nehru, C.E., Berkley, J.L., Keil, K., Jarosewich, E. and Gomes, C.B. (1976) Petrogenesis of the Serra de Mage cumulate eucrite: (abst.) *Meteoritics* **12**, 341.
- Gomes, C.B., Keil, K., Berkley, J.L., Jarosewich, E. and Curvello, W.S. (1977) Mineralogy, petrology, and chemistry of the Itapicuru Mirim, Macau, and Santa Barbara chondrites: (abst.) *Meteoritics* **12**, 241.
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- Berkley, J.L., Keil, K. and Prinz, M. (1979) The Governador Valadares nakhlite and its relationship to other nakhlites: (abst.) *Lunar and Planetary Science* **X**, part 1, 101-103.
- Berkley, J.L. and Keil, K. (1980) Ureilites revisited: Petrologic evidence for a cumulate origin: (abst.) *Meteoritics* **15**, 312-313.
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- Berkley, J.L. and Goodrich, C.A. (1985) Cohenite-bearing spherules in ureilites: Petrology and implications: (abst.) *Lunar and Planetary Science* **XVI**, 49-50.
- Goodrich, C.A. and Berkley, J.L. (1985) Minor elements in ureilites: Evidence for reverse fractionation and interstitial silicate liquids: (abst.) *Lunar and Planetary Science* **XVI**, 280-281.
- Berkley, J.L. (1986) Implications of fabric relations in the ALH82130 ureilite: (abst.) *Meteoritics* **21**, 334-335.
- Berkley, J.L. (1987) Petrology and compositional trends in five new Antarctic diogenites: (abst.) *Lunar and Planetary Science* **XVIII**, 62-63.
- Berkley, J. L. (1988) LEW85313 Howardite: Clues to the cumulate eucrite-diogenite connection?: (abst.) *Lunar and Planetary Science* **XIX**, 56-53.
- Berkley, J.L. (1988) Ion probe analysis of melt veins in the META78008 ureilite: (abst.) 51st Ann. Mtng. Meteoritical Society, Fayetteville, AR.
- Berkley, J. L. (1989) Precision minor element analyses in silicate minerals in ureilites: (abst.) *Lunar and Planetary Science* **XX**, 61-62.
- Berkley, J. L. (1989) Petrologic relationships among eucrite clasts in LEW85313 howardite: (abst.) *Lunar and Planetary Science* **XX**, 63-64.
- Berkley, J. L. (1990) Petrology of newly recovered orthopyroxene-bearing Antarctic ureilites: A new ureilite type?: (abst.) *Lunar and Planetary Science* **XXI**, 69-70.
- Berkley, J. L. (1990) Strange clasts in Antarctic howardites: Evidence for advanced differentiation and complex processes: (abst.) *Lunar and Planetary Science* **XXI**, 71-72.
- Treiman, A. H. and Berkley, J. L. (1992) A new ureilite: Preliminary data on Nuevo Mercurio (b): *Lunar and Planetary Science* **XXIII**, 1449-1450.
- Berkley, J.L. and Baird (1996) Geochemistry and petrology of calcareous Ordovician volcanic ash deposits in eastern New York State: Preliminary results (paper 7223): *Geol. Soc. Am. N.E. Section Meeting, Buffalo, NY, Abstracts with Programs*, p. 39.
- Berkley, J.L., Treiman, A., Jones, J.H., and Mittlefehldt, D.W. (1999) Highly magnesian orthopyroxenite xenoliths in EETA79001: Implications for Martian magmas and differentiation: (abst.) *Lunar and Planetary Science* **XXX**, Lunar and Planetary Institute, Houston, 1588-1589.
- Berkley, J.L., Treiman, A.H. and Jones, J.H. (2000) Petrologic history of a complex orthopyroxenite in EETA79001 Martian meteorite: (abst.) *Lunar and Planetary Science* **XXXI**, Lunar and Planetary Institute, Houston.
- Berkley, J.L. and Goodrich, C. A. (2001) Evidence for multi-episodic igneous events in ureilite MET 78008: (abst.) *Meteoritics & Planetary Science* **36**, no. 9, p. A18-A19 Supplement. Presented at 64th Meteoritical Society Meeting, September 10, 2001, Rome, Italy.
- Mittlefehldt, D. W. and Berkley, J. L. (2002) Petrology and geochemistry of paired Brachinites EET 99402 and EET 99407: (abst.) *Lunar and Planetary Science* **XXXIII**, Lunar and Planetary Institute, Houston.
- Berkley, J.L. and Dykstra, Kaitlyn (2009) Mars sediment analog? Dark biomineralized Mn-oxide/hydroxide cemented sandstone of low-T spring origin. (abst) *Lunar and Planetary Science* **XXXX**, Lunar and Planetary Institute, Houston, paper 1963.
- Goodrich C. A., Van Orman J. A. Domanik K., Berkley J. L. (2009) Metal in Ureilites: Petrologic Characterization (poster & abstract). *Lunar and Planetary Science* **XXXX**, Lunar and Planetary Institute, Houston, abst. #1132..

Guidebook Articles:

Gilman, R. A. and Berkley, J. L. (1990) A few of our favorite places; an environmental and geological excursion in Chautauqua County: Ed. by Lash, G. G., Guidebook, New York State Geological Society, 62nd Annual Meeting, Fredonia, Sat. G-1 - Sat. G-23.

Encyclopedia Articles:

in McGill's Survey of Science Series: Earth Sciences (1990) Salem Press, Pasadena:
Basalt Rocks; Flood Basalts; Ultramafic Rocks; Anorthosites

in McGill's Survey of Science Series: Physics (1992) Salem Press, Pasadena:
Planetary Orbits; Satellites of Planets

in McGill's Survey of Science Series: Applied Science (1993) Salem Press, Pasadena:
Thermal Pollution Controls

in McGill's Survey of Science Series: Natural Resources (1997) Salem Press, Pasadena:
Igneous Rocks, Processes, and Mineral Deposits
Plutonic Igneous Rocks
Phosphates

in McGill's Choice: Astronomy and the Solar System (1996) Salem Press, Pasadena:
Europa (Moon of Jupiter)

in McGill's Choice: U. S. Space Program (1997) Salem Press, Pasadena
Magellan: Venus

in McGill's Science Series: Earth Sciences (1997) Salem Press, Pasadena
Cascades
Plutonic Rock
Evaporites

in Encyclopedia of Planetary Sciences (1994) Chapman & Hall: p. 868-874.
Ureilite Meteorites

Monographs:

Berkley, J. L. (1994) *In the Defense of This Flag: The Civil War Diary of Pvt. Ormond Hupp, 5th Indiana Light Artillery*: McGuinn and McGuire Publishing, Bradenton, FL, 313 pp.

Government Reports:

Warner, R.D., Berkley, J.L., Mansker, W., Warren, R., Keil, K. (1976) Electron microprobe analyses of spinel, Fe-Ti oxides and metal from Apollo 17 rake sample mare basalts: UNM Inst. of Meteoritics, Spec. Paper no. 15, pp. 158.

Berkley, J.L. (1998) Petrology and Geochemistry of a Mg- and Al-rich Orthopyroxenite Xenolith in the EETA79001 Shergottite: Implications for Mars Crustal Evolution: in Final Reports, NASA/ASEE Faculty Fellowship Program, NASA Johnson Space Center, Houston NASA/CR-1999-208923, p. 3-1 to 3-14.

Berkley, J. K. (1999) Precision Electron Microprobe Analysis of Trace and Minor Elements in an Orthopyroxenite Xenolith, EETA79001 Antarctic SNC Meteorite: in Final Reports, NASA/ASEE Faculty Fellowship Program, NASA Johnson Space Center, Houston NASA/CR-2000-208924, p. 2-1 to 2-14.