



Klaus Keil

1934 - 2022



Biography

Although born in Hamburg, Klaus Keil grew up in Jena (the original home of the Carl Zeiss company).

He got his PhD in Mainz.

From 1990, Klaus Keil was Emeritus Professor, former Director of the Hawai'i Institute of Geophysics and Planetology, and former Interim Dean of the School of Ocean and Earth Science and Technology at UH Mānoa, where he built up the School of Planetary Science.

He was at the Institute of Meteoritics at the University of New Mexico from 1968 to 1990

He has worked on meteorites since 1958, and was a pioneer or microanalysis.

He worked on the remote-sensing XRF spectrometer for Mars and used nano-SIMS in the study of "stardust" (micron-sized objects).

Microanalysis

Klaus was a pioneer in the use of the electron microprobe in meteoritics and in petrology and mineralogy in general. In the early 1960s, he worked with colleagues at NASA Ames Research Center, Ray Fitzgerald and Kurt Heinrich, to make the first energy dispersive X-ray spectrometer for use in microanalysis. This device was the first to focus on terrestrial and extraterrestrial geological materials, and the first to focus on terrestrial geological materials, and the first to use a solid-state lithium-drifted Si detector (EDS).

In stardust, primary solar-nebula vs. secondary (or possibly terrestrial contaminating) material can be distinguished by the isotopic ratio.



Early microanalysis.

Geochimica et Cosmochimica Acta 1968, Vol. 32, pp. 939 to 947. Pergamon Press Ltd. Printed in Northern Ireland

Electron microprobe analysis of some rare minerals in the Norton County achondrite

KLAUS KEIL and KURT FREDRIKSSON
University of California, La Jolla, California

(Received 22 March 1963)

Solid-State Energy-Dispersion Spectrometer for Electron-Microprobe X-ray Analysis

Abstract. Improved lithium-drifted silicon solid-state detectors allow detection and energy dispersion of x-rays of about 3 to 30 kiloelectron volts in the electron-microprobe x-ray analyzer. Energy resolution is sufficient to separate peaks of characteristic x-rays of elements adjacent in the periodic system at atomic number 20 and higher. The detected x-ray spectrum emitted from an unknown sample can be recorded with a multichannel analyzer in approximately 60 seconds.

RAY FITZGERALD
Institute for Pure and Applied
Physical Sciences, University of
California, La Jolla 92037

SCIENCE, VOL. 159

KLAUS KEIL
Ames Research Center, National
Aeronautics and Space Administration,
Moffett Field, California 94035

2 FEBRUARY 1968

KURT F. J. HEINRICH
National Bureau of Standards,
Washington, D.C. 20234

Famous paper on the first use of EDS.

Named Objects

Available online at www.sciencedirect.com

ScienceDirect
Chemie der Erde 67 (2007) 37–54

ELSEVIER

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www.elsevier.de/chemer

Occurrence and origin of keilite, (Fe_{>0.5}Mg<0.5)S, in enstatite chondrite impact-melt rocks and impact-melt breccias

Klaus Keil

Hawaii Institute of Geophysics and Planetology, School of Ocean and Earth Science and Technology, University of Hawaii at Manoa, Honolulu, Hawaii 96822, USA

Received 24 August 2005; accepted 1 April 2006

Awarded by the International Mineralogical Institute (24 experts)

Wikipedia

5054 Keil

5054 Keil

Infobox Planet

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discovery = yes

discovery_ref =

discoverer = E. Bowell

discovery_site = Flagstaff

discovered = January 12, 1986

designations = yes

mp_name = 5054

Awarded by Smithsonian's International Astrophysical Union

Outreach, Honors

Microsc. Microanal. 15, 476–483, 2009
doi:10.1017/S1431927609990377

**Microscopy and
Microanalysis**
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Celebrating 40 Years of Energy Dispersive X-Ray Spectrometry in Electron Probe Microanalysis: A Historic and Nostalgic Look Back into the Beginnings

Klaus Keil,^{1,4} Ray Fitzgerald,² and Kurt F.J. Heinrich³

¹Hawaii Institute of Geophysics and Planetology, School of Ocean and Earth Science and Technology, University of Hawaii at Manoa, Honolulu, HI 96822, USA

²8422 La Jolla Shores Dr., La Jolla, CA 92037, USA

³804 Blossom Dr., Rockville, MD 20850, USA

EDS Anniversary paper (delayed).



Book from 2005 conference.

1972 Past President and a founding member of MAS's predecessor.

1988 Leonard Medal of the Meteoritical Society.

1994-2003 Interim Director and Director of HIGP (Hawai'i Institute Geoplanetary, NASA Astrobiology Institute).

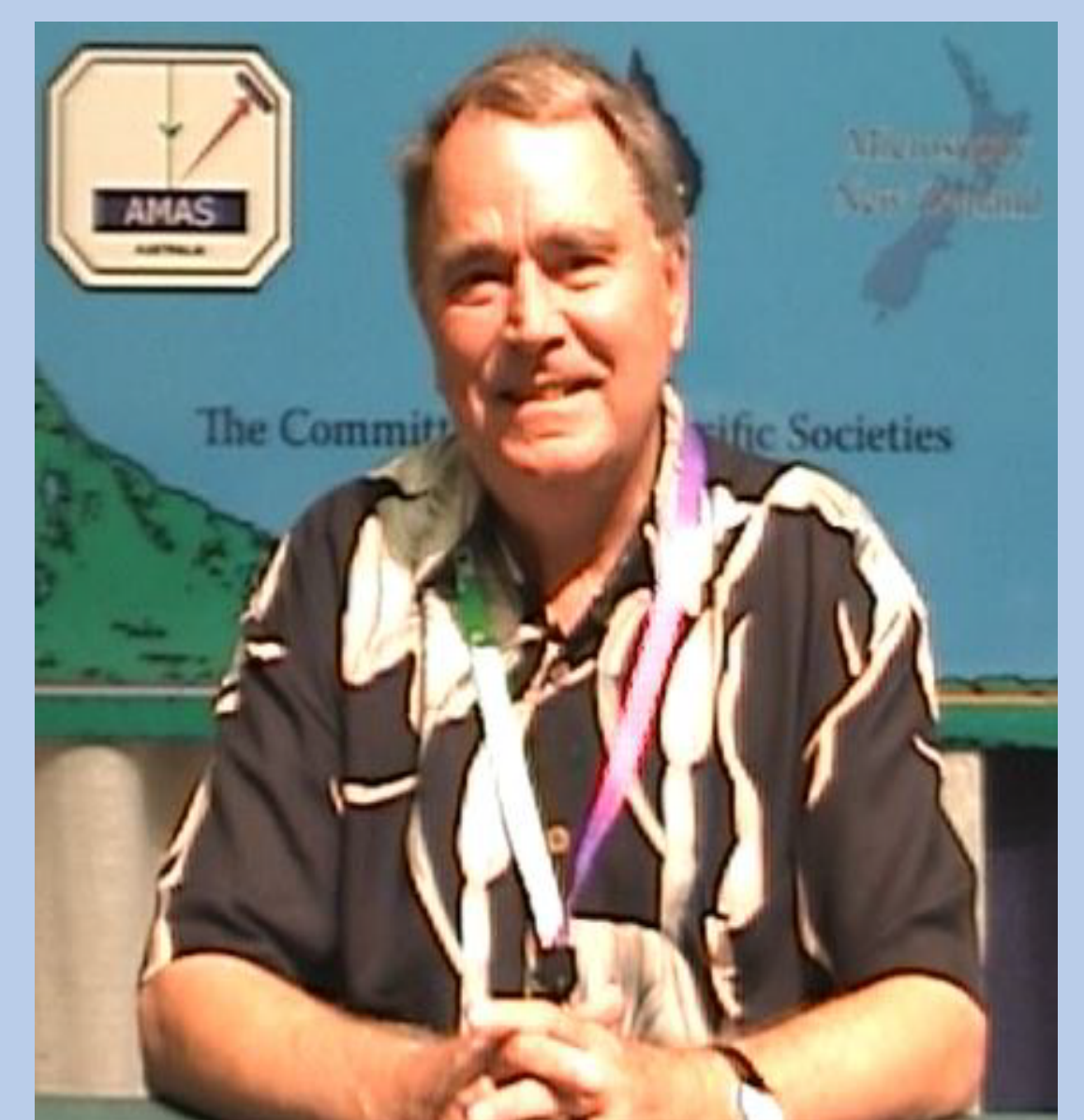
2001 Honored at Portland MSA meeting (30h Anniversary of the introduction of EDS).

2002 Microbeam Analysis Society's 2002 Presidential Science Award.

2003-2006 Interim Dean of SOEST (School of Ocean and Earth Science and Technology, University of Hawai'i at Mānoa).

2006 J. LawrenceSmith Medal, which is awarded by the National Academy of Sciences.

2018 MAS Fellows Legends Class.



During 2005 interview.

Acknowledgements

Rather than listing the hundreds of citations in Dr. Keil's bibliography, just the sources of this poster are listed here:

University of Hawai'i at Mānoa

MSA interview, 2006 (available from MSA Archivist)