



**ÖAW**

Österreichische Akademie  
der Wissenschaften

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## EDUARD SUESS LECTURES 2009/2010

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2. Dezember 2009, 18:15 Uhr



### Harrison H. SCHMITT

Apollo 17 Science Astronaut, and University of Wisconsin-Madison, USA

### Origin and History of the Moon and Earth Through an Explorer's Eyes

*Apollo 17's exploration and observation of geological features in the valley of Taurus-Littrow provide new insights into the origin and history of the Moon and how that knowledge relates to the early history of the Earth. Volatiles associated with orange volcanic glasses indicate that lunar origin by giant impact is unlikely; the age of rock melted by the impact event that formed the 740km diameter Serenitatis Basin helps constrain similar, life-associated events on Earth 3.8 billion years ago; crystalline rocks older than 4.4 billion years define major melting events within the Moon soon after it formed around the sun.*

Moderator: **Christian KÖBERL** (ÖAW, Uni Wien)



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#### Veranstalter:

Österreichische Akademie der Wissenschaften (ÖAW)  
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Wiener Vorlesungen - Dialogforum der Stadt Wien  
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#### Nächster Termin:

Mittwoch, 27. Jänner 2010, 18:15 Uhr

**Bernd LAMMERER, Universität München, Deutschland**

#### **ACHTUNG: GEÄNDERTER VERANSTALTUNGSORT**

Wiener Rathaus, Festsaal, Feststiege I, 1010 Wien, Lichtenfelsgasse 2

#### **Warum gibt es die Alpen?**

*In den Gesteinen der Alpen ist eine lange und aufregende Geschichte gespeichert, welche die Erdgeschichte lebendig werden lässt. Kontinente zerfallen, Ozeane kommen und vergehen, Festland taucht unter, Meeresboden formt hohe Gipfel, scheinbar feste Gesteine zerfließen wie Honig. Moderne geophysikalische Forschungen erlauben heute einen Einblick auch in die tiefsten Strukturen dieses Gebirges, mit deren Hilfe die Entwicklung der Alpen rekonstruiert werden kann. Es wird das Zusammenspiel der erdinneren und äußeren Kräfte und all der Vorgänge aufgezeigt, die letztlich zu diesem grandiosen Gebirge geführt haben.*

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**Information:** ÖAW/Büro für Öffentlichkeitsarbeit, Dr. Marianne Baumgart

T +43-1-51581-1219, marianne.baumgart@oeaw.ac.at, <http://www.oeaw.ac.at>

## Harrison H. SCHMITT – Biographischer Hintergrund

Harrison Hagan Schmitt, a native of Silver City, NM, has the diverse experience of a geologist, pilot, astronaut, administrator, businessman, writer, and U. S. Senator. Schmitt received his B. S. from Caltech, studied as a Fulbright Scholar at Oslo, and attended graduate school at Harvard. Geological field studies in Norway formed the basis of his Ph.D. in 1964. As a civilian, Schmitt received Air Force jet pilot wings in 1965 and Navy helicopter wings in 1967, logging more than 2100 hours of flying time.

Selected for the Scientist-Astronaut program in 1965, Schmitt organized the lunar science training for the Apollo Astronauts, represented the crews during the development of hardware and procedures for lunar surface exploration, and oversaw the final preparation of the Apollo 11 Lunar Module Descent Stage. He served as Mission Scientist in support of the Apollo 11 mission. After training as back-up Lunar Module Pilot for Apollo 15, Schmitt flew in space as Lunar Module Pilot for Apollo 17 - the last Apollo mission to the moon. On December 11, 1972, he landed in the Valley of Taurus-Littrow as the only scientist and the last of 12 men to step on the Moon.

In 1975, after two years managing NASA's Energy Program Office, Schmitt fulfilled a long-standing personal commitment by entering politics. Elected in 1976, he served a six-year term in the U.S. Senate beginning in 1977. Senator Schmitt, the only "natural scientist" in the Senate since Thomas Jefferson was Vice-President of the United States and President of the Senate, worked as a member of the Senate Commerce, Banking, Appropriations, Intelligence, and Ethics Committees. In his last two years in the Senate, Schmitt held the position of Chairman of the Commerce Subcommittee on Science, Technology, and Space and of the Appropriations Subcommittee on Labor, Health and Human Services, and Education. He later served on the President's Foreign Intelligence Advisory Board, the President's Commission on Ethics Law Reform, the Army Science Board, as Co-Chairman of the International Observer Group for the 1992 Romanian elections, and as Vice Chairman of the U.S. delegation to the 1992 World Administrative Radio Conference in Spain. He is on the Maguire Energy Institute's Board of Advisors, and served as co-chair of NASA's Human Planetary Landing Systems Capabilities Road-mapping effort in 2004-05.

Harrison Schmitt was Chairman of the NASA Advisory Council from November 2005 until October 2008. He led the Council's deliberations on issues related to Aeronautics, Audit and Finance, Biomedicine, Exploration (human flight systems development), Human Capital, Science, and Space Operations. He also consults, speaks, and writes on policy issues of the future, the science of the Moon and Planets, history of space flight and geology, space exploration, space law, and the American Southwest. He presently is Chair Emeritus of The Annapolis Center (risk assessment) and is Adjunct Professor of Engineering, University of Wisconsin-Madison, teaching "Resources from Space." Schmitt became a consultant to the Fusion Technology Institute at the University of Wisconsin in 1986, advising on the economic geology of lunar resources and the engineering, operational, and financial aspects of returning to the Moon. He is on the staff of the Institute for Human and Machine Cognition of Pensacola, Florida. Current board memberships include Orbital Sciences Corporation, Edenspace Systems Corporation, and PhDx Systems, Inc., and, as a retired Director, he continues as an emeritus Member of the Corporation of the Draper Laboratory. He also has served as a member of the Energy Department's Laboratory Operations Board. He is the author of, "Return to the Moon" (2006 Springer-Praxis) that describes a private enterprise approach to providing lunar helium-3 fusion energy resources for use on Earth.

Schmitt's honors include 1973 Arthur S. Fleming Award; 1973 Distinguished Graduate of Caltech; 1973 Caltech Sherman Fairchild Scholar; 1973 Manned Spacecraft Center Superior Achievement Award; 1973 NASA Distinguished Service Award; 1973 First Extraterrestrial Field Geologist Award of the Geological Society of America; 1977 Fellow of the AIAA; Honorary Member of the American Association of Petroleum Geologists, Norwegian Geographical Society, New Mexico Geological Society, and Geological Association of Canada; 1981 Engineer of the Year Award from the National Society of Professional Engineers; 1981 National Security Award; 1982 Public Service Award of the American Association of Petroleum Geologists; 1989 Lovelace Award (space biomedicine); 1989 G.K. Gilbert Award (planetology); 2002 Aviation Week Legend Award; 2008 American Association of State Geologists Pick and Gavel Award; and Honorary Fellow of the Geological Society of America; American Institute of Mining, Metallurgical and Petroleum Engineers; and Geological Society of London. Dr. Schmitt has been inducted into the Astronaut Hall of Fame and the International Space Hall of fame and has received honorary degrees from several U.S. and Canadian Universities. In recognition of past service, the U.S. Department of State in July 2003 established the Harrison H. Schmitt Leadership Award for U.S. Fulbright Fellowship awardees. In 2007, Schmitt was awarded the first Eugene M. Shoemaker Memorial Award by Arizona State University and is the first recipient of the National Space Society's Gerard K. O'Neill Memorial Space Settlement Award.