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IN MEMORIAM: AHMED EL GORESY

Noted mineralogist and meteoriticist Ahmed El Goresy passed away on 3 October 2019, aged 85. Ahmed El Goresy's research focused on minerals and mineral assemblages of extraterrestrial samples. Using his favorite tool, the reflected light microscope, he studied meteorite samples from asteroids, the Moon, and Mars, lunar rocks, and terrestrial impactites. He was a pioneer in complementing his microscope findings with scanning electron microscopy, electron microprobe, ion probe, and Raman spectroscopy. He made numerous discoveries of shock-induced high-pressure phases in meteorites and in samples from terrestrial impact craters; he detected unusual mineral assemblages in a variety of meteorite types and studied their chemistry and isotopic composition. He significantly contributed to a better understanding of the cosmochemical processes operating in the early solar system.

In 1955, Ahmed El Goresy obtained his BSc in mineralogy and petrology from the University of Heliopolis (Cairo, Egypt). In 1961, he received his PhD for work on ore deposits. His supervisor was the famous pioneer of ore microscopy, Paul Ramdohr at the Universität Heidelberg (Germany). In 1961, Ahmed briefly returned to Egypt taking a research position in Cairo. In 1963, he became research scientist at the Max-Planck-Institut für Kernphysik (Heidelberg, Germany). He then spent time as a guest scientist at the Smithsonian Astrophysical Observatory/Harvard University (USA) before taking a two-year post-doctoral fellowship at the Carnegie Institution of Washington (USA). After his return to Germany, he became senior scientist at the Max-Planck-Institut für Kernphysik and, later, professor at the Universität Heidelberg. In 1998, he officially retired from his position in Heidelberg and moved to the cosmochemistry department of the Max-Planck-Institut für Chemie in Mainz (Germany). After closure of the cosmochemistry department in 2005, he moved to the Bayerisches Geoinstitut in Bayreuth (Germany).

Over ~20 years, Ahmed El Goresy worked closely with Paul Ramdohr (1890–1985), who was a world-class scientist in opaque mineralogy and who began his studies on meteorites only after he had retired. Ramdohr shared his immense knowledge of opaque minerals and his special skills in reflected-light microscopy with Ahmed El Goresy. In 1969, Ramdohr became principal investigator of NASA's lunar sample analysis program (focusing on the opaque mineralogy of lunar rocks) and it was El Goresy who was coinvestigator. El Goresy and Ramdohr made fundamental contributions to the opaque mineralogy and phase assemblages of lunar mare basalts, as well as lunar highland rocks. They estimated the temperature and oxygen fugacity during the crystallization of lunar mare basalts.

In the meteorite community, Ahmed El Goresy is particularly well-known for his thorough studies of opaque assemblages and spinel morphologies in calcium–aluminum-rich inclusions (CAIs) in Allende and other carbonaceous chondrites, for isotopic studies of acapulcoites, and his work on enstatite chondrites. From about 1995 on, El Goresy intensified his studies of shock effects in chondrites, Martian meteorites and samples from terrestrial impact craters. He and his coworkers discovered new shock-induced mineral phases, including poststishovite polymorphs (e.g., seifertite), high-pressure aluminum-silicate phases (lingunite), akaogiite (a high-pressure polymorph of TiO_2), and a polymorph of graphite. El Goresy and his coworkers also observed solid-state transformations of olivine to wadsleyite and ringwoodite; the decomposition of olivine; and the growth of wadsleyite, ringwoodite, and majorite from melts during shock events. The study of high-pressure polymorphs, their textural occurrence, and relevant phase relations can be used to estimate the magnitude and conditions of impacts in



the early solar system. These findings are important for the early collisional history of meteorite parent bodies and for studies of the structure and compositions of the interiors of Earth and other planets.

Ahmed El Goresy served the scientific community as Council Member of the Meteoritical Society, Chairman of the International Commission on Cosmic Mineralogy of the International Mineralogical Association, and United Nations Visiting Professor at the Institute of Mineral Deposits of the Chinese Academy of Geology. He participated in the NASA Lunar and Planetary Science Review Board. He was awarded the Victor-Moritz Goldschmidt Award and the highest award of the German Mineralogical Society, the Abraham-Gottlob-Werner Medal. In 1972, he became Fellow of the Meteoritical Society and, in 2013, was the recipient of the Meteoritical Society's highest honor, the Leonard Medal. He was a Fairchild Distinguished Scholar in 1983 at the California Institute of Technology (USA), a guest professor at the Muséum National d'Histoire Naturelle in Paris (France) in 1994, and, more recently, a guest professor at the Tohoku University (Japan) and at the École Polytechnique Fédérale de Lausanne (Switzerland).

In scientific meetings Ahmed El Goresy was very outspoken. He clearly stated his opinion and never avoided discussing controversial issues. He was extremely enthusiastic about his research. Indeed, it was almost impossible to talk to him about anything other than his research! He could easily become so excited about his findings that in his talks he would often exceed the time limit. His contributions and presence will be sorely missed.

Herbert Palme

(for full obituary, please see the Meteoritical Society's website).

THE BARRINGER FAMILY FUND FOR METEORITE IMPACT RESEARCH

The Barringer Crater Company has established a special fund to support field work by eligible students interested in the study of impact cratering processes. The Barringer Family Fund for Meteorite Impact Research will provide a number of competitive grants in the range of \$2,500 to \$5,000 to support field research at known or suspected impact sites worldwide. Grant funds may be used to assist with travel and subsistence costs, as well as for laboratory and computer analysis of research samples and findings. Masters, doctoral, and postdoctoral students enrolled in formal university programs are eligible. Application to the fund will be due by 10 April 2020, with notification of grant awards by 12 June 2020.

Additional details about the fund and its application process can be found at: http://www.lpi.usra.edu/science/kring/Awards/Barringer_Fund.

ANNUAL MEETING SCHEDULE

- 2020 (83rd) 9–14 August, Glasgow (Scotland)
- 2021 (84th) 14–21 August, Chicago (Illinois, USA)
- 2022 (85th) 3–8 July, Perth (Australia)
- 2023 (86th) Dates to be determined, Brussels (Belgium)



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