



Meteoritical Society

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ARIZONA STATE UNIVERSITY CENTER FOR METEORITE STUDIES CELEBRATES 50th ANNIVERSARY

To mark its 50th anniversary, the Center for Meteorite Studies (CMS) at Arizona State University held a symposium in October 2011 entitled "Meteoritics and Cosmochemistry: Past, Present, and Future." Director Meenakshi Wadhwa acknowledged the 40 years of accomplishments and important contributions of CMS founding director Carleton B. Moore and announced that the CMS meteorite collection would be named in his honor. One hundred members of the meteoritics and planetary community enjoyed talks by Gerald Wasserburg (Caltech), Donald Burnett (Caltech), Andy Davis (University of Chicago), Caroline Smith (Natural History Museum, London), Phil Christensen (Arizona State University), and Tim McCoy (Smithsonian Institution), who offered their unique insights on the intertwined pursuits of exploration, curation, and analysis in meteoritical science. McCoy also delivered an engaging public lecture following the symposium, in which he commented on early results from NASA's Dawn mission, currently orbiting the asteroid Vesta. The celebration concluded with a field trip to Meteor Crater guided by David Kring (Lunar and Planetary Institute), Drew Barringier (Barringer Crater Company), and CMS Collections Manager Laurence Garvie.



Carleton B. Moore, founding director of the Center for Meteorite Studies.
PHOTO CREDIT: CMS/ASU

Michelle Minitti,

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FORMATION OF THE FIRST SOLIDS IN THE SOLAR SYSTEM

On 7–9 November 2011, a three-day interdisciplinary workshop on the island of Kaua'i, Hawai'i, brought together cosmochemists, astronomers, and astrophysicists to consider the formation of the first solids in the Solar System: calcium–aluminum-rich inclusions (CAIs), chondrules, and differentiated asteroids. The meeting was hosted by the University of Hawai'i and sponsored by the Lunar and Planetary Institute, the Meteoritical Society, NASA, the Barringer Crater Company, CAMECA Instruments, and the Center for Star and Planet Formation at the Natural History Museum of Denmark. It was organized by Sasha Krot, with help from Ed Scott, Jonathan Williams, Gary Huss (all at the University of Hawai'i), Martin Bizzarro (Natural History Museum of Denmark), and Yuri Amelin (Australian National University).

The sessions focused on four related issues. How were CAIs and chondrules formed and accreted in the disk around the young Sun? What can we learn from short-lived and long-lived isotopes in meteorites about the chronology of the first few million years of Solar System history and the astrophysical environment? How were stable isotope anomalies preserved in meteorites, and what were the carriers of these anomalies? What do oxygen isotope anomalies tell us about the formation of the first solids, and how are they related to the much smaller isotopic anomalies in, for example, chromium, titanium, and nickel?

Among the 180 participants from 16 countries were 30 students and recent postdocs who received travel grants to attend the workshop. Among these recipients, Uta Beyersdorf (Max-Planck-Institut für Chemie, Mainz), Patricia Doyle (Imperial College London), Mia Olsen (University of Copenhagen), Dennis Harries (University of Bayreuth),

Juri Katayama (Hokkaido University), and Francesco Pignatale (Swinburne University of Technology, Melbourne) received travel grants from the Meteoritical Society Endowment Fund.

The meeting was dedicated to Klaus Keil (University of Hawai'i) to celebrate his distinguished career in meteoritics and cosmochemistry. Klaus published his first papers on meteorites 50 years ago, pioneered the use of the electron microprobe to determine the chemical composition of minerals in meteorites, and is one of the co-inventors of the energy dispersive X-ray spectrometer, which is used on electron microprobes and microscopes to analyze small samples. Before an ocean-side reception in his honor, Klaus entertained everyone with a personal account of some highlights from his career, including the return of the first Apollo lunar samples and how Hans Suess arranged for him to leave East Germany just a few months before the wall was erected. Klaus celebrated his 77th birthday soon after the workshop and will retire next summer from the University of Hawai'i.



Three of the six students who received Meteoritical Society travel grants—Mia Olsen, Dennis Harries, and Uta Beyersdorf—with Klaus Keil. PHOTO BY ED SCOTT

Abstracts of the 150 oral and poster presentations at the workshop are available at the LPI website. A review of the scientific issues and new data presented at the meeting is available at the Planetary Science Research Discoveries website, www.psr.d.hawaii.edu/.

Ed Scott, University of Hawai'i

SECOND ARAB IMPACT CRATERING AND ASTROGEOLOGY CONFERENCE

After the highly successful AICAC I meeting in Jordan in November 2009, AICAC II was convened on 13–20 November 2011 in Morocco. The conference and subsequent excursion were ably organized by Prof. Hasnaa Chennaoui Aoudjehane of Hassan II University, Casablanca, with help from her team of colleagues and students. The first two days featured scientific presentations on fundamental aspects of impact-cratering science and new developments in related fields. The conference's goal was to foster, through this transfer of knowledge, collaborations between scientists/young researchers from Arab countries and established impact-cratering workers. The conference began with a plenary session at Hassan II University, which included keynote and review talks, followed by sessions on the effects of impacts on the atmosphere, landscape, life, and land stability; general astrogeology; discoveries and investigations of new impact structures; geotourism and heritage conservation related to impact structures; desert meteorites; and experimental studies. Some 70 abstracts were submitted by 77 participants



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from 16 countries, including 6 North African and Middle East countries. Twenty-one keynote and invited lectures, another 14 oral presentations, and 19 posters were given.

The 2-day meeting closed with a synopsis by David Baratoux (University of Toulouse), who recounted important aspects of the proceedings, for example, the observation that Earth is not an isolated system but interacts with a diversity of solid bodies in the Solar System and beyond. Impact cratering is one of the main geological processes related to planetary evolution. Current research is focused on the origin of bolides, the present flux of asteroids and dust particles onto the Earth, tracking the fall of meteorites, the search for meteorites, and the effects of impact cratering on the terrestrial environment. Presentations in comparative planetology dealt with the effects of oblique impact on planetary surfaces, the cratering record on other planets, and impact rates in the Solar System as determined using remote sensing data of planetary surfaces or analysis of shocked meteorites. Another important topic concerned public outreach about planetary processes (presentations on the Ries Crater Museum and the Vredefort World Heritage Site). Much time was devoted to recognition criteria for impact structures. Detailed studies of known impact structures are important for better understanding impact processes at various scales. Impact processes are hard to study in the laboratory, and many aspects related to high-pressure shock in geological media must be studied by comparing natural and experimentally produced effects, in conjunction with state-of-the-art numerical modeling.

Participants recommended that the AICAC series be continued, with the goal of further enhancing the efforts of researchers in Arab countries. As there are already several groups working on impact structures in Algeria, those colleagues were requested to nurture collaborations and to investigate the possibility of an international field trip to some of these structures, as a basis for an AICAC III meeting in the near future. The possibility that an AICAC symposium could be part of the 2014 annual meeting of the Meteoritical Society in Casablanca was also discussed.

After the symposium in Casablanca, 35 participants joined a 5-day excursion along the route Casablanca–Fes–Erfoud/Merzouga–Ouarzazate–Marrakech–Casablanca. Participants viewed the area's varied and scenic geology and were exposed to the 1200-year cultural-historical heritage of Morocco.



AICAC II was made possible thanks to support from the president of Hassan II University, Casablanca, the dean of the Faculty of Sciences of the university, the CNRST, the Cultural Center of the Atlas Golf Marrakech, and Lafarge Ciments. The Meteoritical Society Endowment Fund and the Barringer Family Fund generously provided travel grants to 15 graduate students and young researchers.

Wolf Uwe Reimold

Museum of Natural History, Berlin



Sociedad Española de Mineralogía

www.ehu.es/sem



JOINT SCIENTIFIC MEETING OF THE SPANISH MINERALOGICAL SOCIETY AND THE SPANISH CLAY SOCIETY

SEM-SEA 2012, the joint scientific meeting of the Spanish Mineralogical Society (SEM) and the Spanish Clay Society (SEA), will be held in Bilbao from June 27 to 30, 2012. This event corresponds to the 32nd meeting of the SEM and the 22nd meeting of the SEA. Organization of the joint meeting has been entrusted to the Department of Mineralogy and Petrology of The University of the Basque Country (UPV/EHU).

The SEM-SEA 2012 program includes the following three components:

Seminar A one-day workshop seminar titled "Archaeometry and Cultural Heritage Preservation: The Contribution of Mineralogy and Related Sciences" will take place on June 27. Scientists of international prestige will deliver seven master lectures on the contributions of mineralogy, petrology, and geochemistry to the characterization, dating, and provenance of man-made and natural artifacts constituting part of our cultural heritage. New conceptual and methodological advances will be examined, and the presentations will be aimed at young scientists.

Scientific sessions These sessions will take place on June 28–29 and will feature plenary lectures by invited scientists on topics of general interest. Submissions for oral and poster presentations on all aspects of clays, mineralogy, petrology, and geochemistry will be accepted. Our main objective is to organize high-quality scientific sessions that will provide a platform for debate and exchange of ideas, and lead to new scientific collaborations.

Geological excursions Two field trips, to proceed in parallel, will be held on June 30:

- E1 – Marine volcanic outcrops in the Upper Cretaceous of the Basque Cantabrian Basin (Bizkaia area)
- E2 – The Carranza Valley and its geological heritage. This excursion will include visits to karstic caves with helictites (Pozalagua), the banded dolomites of Ranero, and an old underground Zn–Pb–F–mine (Matienzo).

Deadlines and Events

- 8 March 2012 – Preliminary abstract submission ends
- 26 April – Closing date for submission of revised and accepted abstracts
- 10 May – Registration at normal rate ends
- 27 June – International seminar on archaeometry and conservation
- 28 June – SEM-SEA 2012 starts; membership assemblies
- 29 June – SEM-SEA 2012 open sessions; conference dinner and awards ceremony
- 30 June – Field trips

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