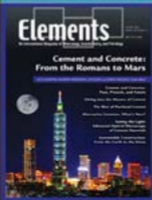


2022

Volume 18

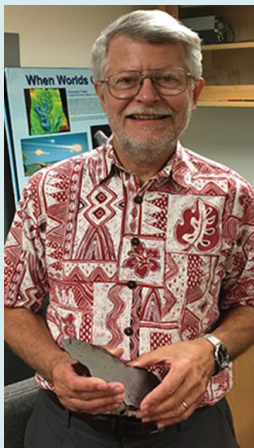


IN MEMORIAM: EDWARD ROBERT DALTON SCOTT

Edward Robert Dalton Scott (74) passed away unexpectedly on 7 October 2021 at his home in San Rafael (California, USA). Scott was a distinguished meteoriticist, former President of the Meteoritical Society, and Emeritus Professor at the School of Ocean and Earth Science and Technology at the Hawai'i Institute of Geophysics and Planetology (HIGP).

Born in Heswall (England), Ed earned his BA and MA degrees from the University of Cambridge's Churchill College (UK), majoring in mineralogy and crystallography with a minor in physics and materials science. In 1972, he received his PhD from the University of Cambridge with a thesis on the geochemistry, mineralogy, and petrology of iron meteorites. After completing his PhD, Ed took postdoctoral positions at the University of California, Los Angeles, with John Wasson, and then at the University of Cambridge with Stuart Agrell. He also held a position as a Senior Fellow in the Department of Terrestrial Magnetism at Carnegie Institution of Sciences in Washington (USA) and spent 10 years as a Research Scientist and then Senior Research Scientist at the University of New Mexico (USA) before joining the staff at HIGP, where he remained until his retirement in 2015.

Ed was a superb scientist with deep curiosity about the Solar System and its origin. Throughout his career, he did innovative research into the nature and origin of all types of meteorites, from iron meteorites to the origins of primitive components in chondritic meteorites, to the nature of processes operating in the cloud of gas and dust surrounding the Sun as it was still forming, and the accretion of nebular dust into asteroids and planetesimals. He was a big thinker who liked complicated problems.



Ed's accomplishments were recognized by his receiving the Leonard Medal from the Meteoritical Society, an international organization founded in 1933 to promote the study of extraterrestrial materials and planetary science. The Leonard Medal recognizes outstanding contributions to the science of meteoritics and closely allied fields. Besides receiving this award, Ed was also recognized by having asteroid 4854 named "Edscott" in 2000 and by having the first natural occurrence of the iron carbide Fe_5C_2 named after him: edscottite. Over the years, he held numerous positions with the Meteoritical Society, including serving as its president. He also served as an associate editor for both the *Journal of Geophysical Research* and *Meteoritics & Planetary Science*.

Ed was a devoted educator, teaching courses at both the undergraduate and graduate levels. For many years he was Associate Director of the Hawai'i Space Grant Consortium, managing the undergraduate fellowship program, which links University of Hawai'i (UH) undergraduate students with faculty members to do research on projects in space science and engineering. Ed was a beloved member of not only the UH faculty but the planetary science community as a whole. In the words of one of his HIGP colleagues, Ed was a "a science friend to all." He certainly was that and much more. Ed was also instrumental in the Meteoritical Society's joining of the *Elements* magazine family. He will be greatly missed.

— Portions of text courtesy of G. Jeffrey Taylor, University of Hawai'i (modified from https://www.lpi.usra.edu/planetary_news/2021/10/11/in-memoriam-edward-r-d-scott-1947-2021/) along with Gary Huss, Klaus Keil, Sasha Krot, and Ian Sanders.

IN MEMORIAM: SANDRA PIZZARELLO

It is with great sadness that we announce that Sandra Pizzarello passed away on 24 October 2021. Sandra was born in Venice, Italy, in 1933. She obtained a PhD in biological sciences at Università degli Studi di Padova (Italy) in 1955. She was a research associate with Farmitalia Research Laboratories, Neuropharmacology Department (Milan, Italy) from 1957 to 1960. She started her research at the Department of Chemistry and Biochemistry, Arizona State University (ASU) (USA) in 1977. She was a research professor and an emeritus professor at ASU until she passed away.

Sandra was a pioneering scientist. While collaborating with the late Prof. John R. Cronin (1937–2010) for over 30 years, she identified and greatly expanded our knowledge of a suite of soluble compounds in carbonaceous chondrites including amino acids, monocarboxylic acids, dicarboxylic acids, hydroxyl acids, hydroxydicarboxylic acids, aliphatic hydrocarbons, ammonia, amines, polar hydrocarbons, as well as insoluble organic matter. Sandra concentrated her efforts on the development of the analytical techniques for these compounds, in particular, a diverse suite of over 80 amino acids, which are different from the distribution of terrestrial amino acids. They carried out the first isotopic analysis of amino acids in meteorites and revealed enrichments in D, ^{13}C , and ^{15}N . These results provided the first evidence that suggested a direct relationship



between meteoritic organic compounds and interstellar chemistry. Later, Sandra worked on the compound-specific C, H, and N isotopic analyses of soluble organic compounds in meteorites. Her results demonstrated the diverse synthetic pathways of these compounds in the early Solar System. One of the highly laudable achievements in Sandra's works, in collaboration with Cronin, was their discovery of L-enantiomeric excesses (ee) in a suite of rare (non-biological) extraterrestrial amino acids from carbonaceous chondrites in 1997.

Sandra's significant contributions to the research fields of meteoritics, astronomy, astrobiology, and origins of life have influenced the next generation of scientists. She was an effective mentor for younger scientists and a role model for women in science. She served as president of ISSOL (International Society for the Study of the Origin of Life – The International Astrobiology Society) from 2014 to 2017. She is survived by her husband, Tony, and three children and their families.

Modified from full obituary written by: Hikaru Yabuta (Hiroshima University, Japan), George Cooper (NASA Ames Research Center, USA), Lynda Williams (Arizona State University, USA), Kenso Soai (Tokyo University of Science, Japan), Maitrayee Bose (Arizona State University). For the full version please see the society's website.

Cont'd on page 65

<http://meteoriticalsociety.org>

THANKS TO OUR SOCIETY'S COMMITTEE MEMBERS

The Meteoritical Society would like to extend its sincere thanks to all those members who are serving on society committees this year. We have listed their names below, with the names of the committee chairs in bold. Without the generous help of these members, the Met Soc could not function. We greatly appreciate their help!

Officers and Council

Elected Officers and Councilors of the Society

Brigitte Zanda	President
Nancy Chabot	Vice President
Meenakshi Wadhwa	Past President
Munir Humayun	Secretary
Tasha Dunn	Treasurer
Henner Busemann	Councilor
Sarah Crowther	Councilor
Elena Dobrica	Councilor
Denton Ebel	Councilor
Chris Herd	Councilor
Kuljeet Kaur Marhas	Councilor
Takashi Mikouchi	Councilor
Ann Nguyen	Councilor

Editorial Personnel

The editors of the Society's publications and website

Tim Jull	Editor of <i>Meteoritics and Planetary Sciences</i>
	Executive editor of <i>Geochemica et Cosmochemica Acta</i>
Jeff Catalano	Editor of Meteoritical Society contributions to <i>Elements</i>
Cari Corrigan	Chair of website & Outreach Committee
Jim Rowe	

Leonard Medal Committee

Nominates candidates for the Leonard Medal, Nier Prize, and election of Fellows

Hiroshi Hidaka 2022
Zita Martins (chair) 2023
 Jeff Cuzzi 2024
 Alexander N. Krot 2025
 Larry Nittler 2026

Barringer Award Committee

Annual award for outstanding work in the field of impact cratering

Sarah T. Stewart 2022
 Roger Gibson 2023
 Thomas Kenkmann 2024
 Ludovic Ferrière 2025

Publications Committee

Oversight for the journal *Meteoritics and Planetary Science*

Ian Lyon (chair) 2023 (2nd term)

Mikhail Zolotov 2023
 Hikaru Yabuta 2022
 Sandeep Sahijpal 2022
 Janice Bishop 2023
 Suzanne Schwenzer 2023
 Ex officio member:
 the Society Treasurer, Tasha Dunn

Joint Publications Committee

Oversight for the journal *Geochimica et Cosmochimica Acta*

Karim Benzarara (chair, GS) 2022

Jon Friedrich (MS) 2022
 Sara Russell (MS) 2022
 Caroline Peacock (GS) 2023
 Conel Alexander (MS) 2024
 Fang-Zhen Teng (GS) 2024

Endowment Committee

Members serve as the trustees for the Society's investment fund

Drew Barringer (co-chair, 7th term) 2022

Rhian Jones (co-chair, 2nd term) 2022
 Gary Huss 2021 (2nd term)
 Candace Kohl 2022
 Dennis Harries (1st term) 2024
 Ad hoc member: Allan Treiman
 Ex officio member:
 Treasurer of the Meteoritical Society, Tasha Dunn

Audit Committee

Produces an audit of the Treasurer's annual report for each fiscal year

Kevin McKeegan (chair) 2021

Denton Ebel 2021
 TBD

Nomenclature Committee

Guidelines for naming meteorites; publication of *Meteoritical Bulletin*

Francis McCubbin (chair, 3rd term) 2024

Mutsumi Komatsu (2nd term) 2022
 Bingkui Miao (2nd term) 2024
 Devin Schrader (1st term) 2022
 Cyrena Goodrich 2023
 Ansgar Greshake 2023
 Juliane Gross 2023
 Katherine Joy 2024
 TBD 2024

Pellas-Ryder Award Committee

Selection of candidates for the Pellas-Ryder Award

Nick Lang (chair) (GSA) 2022

Joseph Boesenberg (MS) 2022
 Jemma Davidson (MS) 2022
 Marisa Palucis (GSA) 2023
 Steven B. Simon (MS) 2023
 TBD (GSA) 2024

Nominating Committee

Nomination of the Society's Officers and Councilors

Ludovic Ferrière

Michaël Zolensky
 Emma Bullock
 Akiko Nakamura
 Maria Eugenia Varela
 Katherine Joy

Membership Committee

Recruit and retain members; nominate Service Award recipients

Arya Udry 2022

Asma Steinhäusser 2022
 Christian Koeberl 2023
 Hasnaa Chennaoui 2023
 Shigekazu Yoneda 2023
 Beda Hofmann 2023
 Ex officio member: Chair of the Endowment Committee, Rhian Jones

McKay Award Committee

Nominates candidate for best student presentation at annual meeting

Romy D. Hanna (Chair) 2022

Lydia Hallis (vice-chair) 2022

Jessberger Award Committee

Nominates outstanding mid-career female isotope geochemists for the Jessberger Award

Mario Trieloff (chair) 2023

Noriko Kita 2023 (vice chair)
 Zita Martens 2023 (Leonard Medal Committee liaison)
 Sara Russell 2023
 Thomas Stephan 2023

Outreach ad hoc Committee

Jim Rowe (chair) 2024

Mendy Ouzillou 2023
 Cari Corrigan 2023
 Philippe Claeys 2023
 Zoe Wilbur 2023
 Steffanie Sillitoe-Kukas 2023
 Ex officio member: Chair of the Endowment Committee, Rhian Jones

Ethics ad hoc Committee

Trevor Ireland (chair) 2023

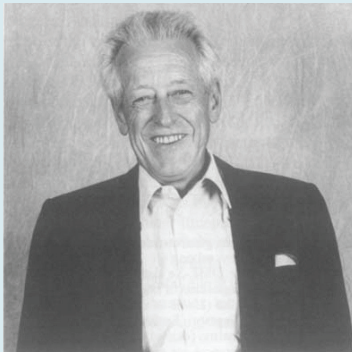
Tracy Rushmer 2023
 Natalia Artemieva 2023

IN MEMORIAM – PETER SIGNER

Peter Signer died on Friday, Dec. 10, 2021. After a long illness, he peacefully fell asleep at the age of 92. He was a Fellow of the Meteoritical Society since 1967. His name is memorialized in the Baur-Signer ion source in noble gas mass spectrometry and the Signer-Nier model for cosmogenic noble gases.

Following his dissertation at the University of Bern (Switzerland) on a mass spectrometric study of the ^{176}Lu decay constant with Friedrich Houtermans and a seven-year stay with Alfred O. Nier at the University of Minnesota (USA), Peter was appointed professor for Geo- and Cosmochronology at ETH Zurich (Switzerland) in 1965. He founded the Laboratory for Noble Gas Mass Spectrometry, which he led until his retirement in 1994, and which is now headed by Henner Busemann in the third generation.

In Minneapolis, Peter contributed much to a better understanding of noble gases in meteorites. In now classical works, he developed the Signer-Nier model describing cosmogenic noble gas production in iron meteorites and with Hans Suess he coined the terms “solar” and “planetary” for different noble gas components in meteorites.



In his first years at ETH, Peter proposed to capture ions from the solar wind with metal foils on space missions, an idea that was ultimately realized by his colleagues at the University of Bern as the famous solar wind experiment during the Apollo lunar missions. Under his leadership, the ETH noble gas laboratory received worldwide recognition, first of all with work on lunar samples and meteorites, studying solar, cosmogenic, and primordial noble gases. Further major activities—in close collaborations with colleagues in Earth and environmental sciences—included surface exposure dating of terrestrial samples with “cosmogenic” noble gases, as well as studies of lake dynamics with noble gases, e.g. by tritium- ^3He dating.

Peter Signer was an enthusiastic lecturer who reminded generations of Earth Science students about the importance of the other planets for understanding Earth.

Peter is survived by his wife Gerti and their two children Ina and Reto. We mourn with them a good friend and teacher.

Rainer Wieler
ETH Zürich



ANNUAL MEETING SCHEDULE

2022	Glasgow, Scotland, 14–19 August
2023	Los Angeles, California, USA, 13–18 August
2024	Brussels, Belgium, EU, July/August (dates TBD)
2025	Perth, Australia, July (dates TBD)
2026	Frankfurt, Germany, July/August (dates TBD)

RENEW YOUR MEMBERSHIP NOW!

Don't forget to renew your society membership! You can renew online at: <https://meteoritical.org/membership/join>



<http://meteoriticalsociety.org>

REPORT OF THE METEORITE NOMENCLATURE COMMITTEE

The Nomenclature Committee (NomCom) continued its work throughout the second year of the global pandemic. During the past year, the discovery of new meteorites continued, although some meteorite-collecting efforts have been postponed or paused due to the pandemic (e.g., ANSMET).

The work of the NomCom would be impossible if not for the dedication of many individuals, including all of the NomCom members, meteorite finders and classifiers, and repository curators. I would like to thank them for their tireless effort to make the global inventory of meteorites available for scientific study. I also want to acknowledge the global community of meteorite collectors because they help drive the demand to find new meteorites, and the scientific community reaps benefits from those efforts. Special acknowledgement goes to outgoing NomCom chair Audrey Bouvier (Universität Bayreuth) who finished her three-year term at the end of 2021. We also welcomed a new member to NomCom in January: Katherine Joy (University of Manchester, UK). We are very happy to have her on board!

NomCom is currently composed of nine appointed members: Francis McCubbin (Chair; NASA JSC, USA), Massimo D'Orazio (Università di Pisa, Italy), Cyrena Goodrich (LPI-USRA, USA), Ansgar Greshake (Museum für Naturkunde Berlin, Germany), Juliane Gross (Rutgers University, USA), Katherine Joy (The University of Manchester, UK), Mutsumi Komatsu (Sokendai, Japan), Bingkui Miao (Guilin University of Technology, China), and Devin Schrader (Deputy Editor, Arizona State University, USA), and three ex-officio NomCom members: Jérôme Gattacceca (MetBull Editor; CEREGE, France), Jeff Grossman (Database Editor, NASA, USA), and Nancy Chabot (MetSoc Vice President; JHU APL, USA).

NomCom is a committee of The Meteoritical Society. The purpose of NomCom is to approve new meteorite names and classifications, and to establish guidelines and make decisions regarding the naming and classification of meteorites. New meteorites, dense collection areas (DCAs), type-specimen repository collections, and revisions are published through the Meteoritical Bulletin and the Meteoritical Bulletin Database (MBDB) (<https://www.lpi.usra.edu/meteor/>).

As of this writing, there are just under 70,000 approved meteorites in the Meteoritical Bulletin Database, including over 13,000 with a classification description, and notably over 520 lunar meteorites (totaling about 886 kg of material) and 330 Martian meteorites (totaling about 260 kg of material). That's right, humans have found and identified over a metric ton of Moon and Mars sitting on Earth's surface!

Meteorites, Dense Collection Areas, and Type-Specimen Repositories: The 2020 entries of the MBDB, totaling 2790 meteorites, have been published in the Meteorite Bulletin, No. 109, by Gattacceca et al. (2021). The full write ups of 1249 non-Antarctic meteorites and supplementary tables can be found online as Supporting Information and in the MBDB Archive. The MB 109 includes 17 approved falls, as well as 21 new DCAs and five new type specimen repositories. Meteoritical Bulletin No. 110, containing new meteorites, DCAs, and type-specimen repositories approved in 2021, is in preparation and will be submitted later this year to *Meteoritics & Planetary Science*.

Meteorite naming: Remember to send your write-ups for new and provisional names to NomCom at least three weeks before submitting your conference abstract or manuscript to journals to avoid potential issues with naming and classification and delays in publication. A list of instructions on how to attain a meteorite name can be found

at <https://www.lpi.usra.edu/meteor/naming.php>. The release of the write-up to the MBDB may be held on request if there is an embargo from publishers.

Finally, please do not hesitate to contact us with questions or concerns about the NomCom, especially with suggestions for improvement (metbulleditor@gmail.com).

Francis McCubbin

Chair of the Nomenclature Committee
NASA Johnson Space Center

REFERENCE

Gattacceca J and 10 coauthors (2021) The Meteoritical Bulletin, No. 109. *Meteoritics & Planetary Science* 56: 1626-1630, doi: 10.1111/maps.13714

GIFTS AND GRANTS GUIDELINES

The stated mission of the Meteoritical Society is “to promote research and education in planetary science with emphasis on studies of meteorites and other extraterrestrial materials that further our understanding of the origin and history of the solar system.” Besides the Society's publications, the annual scientific meetings, establishing official names for newly found meteorites, and the awards sponsored by the Society, there are other ways by which we work toward furthering our mission. This includes supporting student travel to conferences and workshops, supporting student research, assisting scientists from economically disadvantaged countries, supporting classes or field schools, especially those that bring meteoritics and planetary science to developing countries, compiling oral histories from prominent members of the Society, and supporting outreach to the broader public community on meteoritics and planetary science. To support these activities, the Society has created an Endowment Fund. The majority of the Endowment consists of the *General Fund*, which can support one-time activities that are not part of the normal Society business. The Endowment Fund also has named funds, the *Nier Fund*, the *McKay Fund*, and the *TIM Fund*, which were established for the specific purposes. Details about activities supported by all of these Funds can be found under: Activities Supported on the society website. For those who wish to assist in this mission, donations can be made to the General Fund or to any of the specific Funds (see Ways to Contribute on the society website, <https://meteoritical.org/grants>).

ANNUAL MEETING SCHEDULE

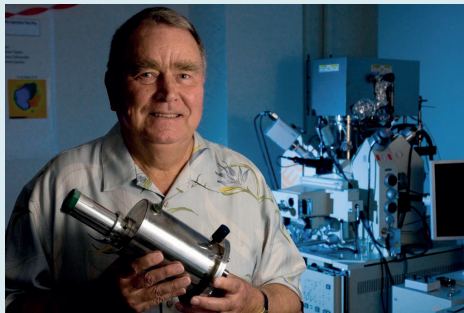
2022	85 th Annual Meeting	August 14–19, Glasgow, UK
2023	86 th Annual Meeting	August 13–18, Los Angeles, USA
2024	87 th Annual Meeting	July/August TBD, Brussels, Belgium (EU)
2025	88 th Annual Meeting	July TBD, Perth, Australia.
2026	89 th Annual Meeting	July/August TBD, Frankfurt, Germany (EU)

RENEW YOUR MEMBERSHIP NOW!

Please don't forget to renew your membership for 2022. Students, this is particularly important if you are interested in applying for one of our student presentation awards, as you must be a member to be eligible. You can renew online at: <https://meteoritical.org/membership/join>

IN MEMORIAM: KLAUS KEIL

I am sad to report that our friend and colleague Klaus Keil passed away peacefully on Friday, February 25th, 2022, at home after a long battle with cancer. He was 87 years old. Klaus 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. Klaus was an outstanding scientist, spectacular mentor, educator, and leader, dedicated family man, and enthusiastic tennis player. His academic and science leadership skills glittered at the University of Hawai'i since 1990, and at the Institute of Meteoritics at the University of New Mexico from 1968 to 1990.



Klaus Keil (December 2008) at HIGP with the original energy dispersive spectrometer (EDS), built and published by R. Fitzgerald, K. Keil and, K.F.G. Heinrich in Science in 1968. Image: SOEST.

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 use a solid-state lithium-drifted Si detector. Over his long and illustrious career, Klaus studied practically every type of meteorite

and lunar sample, addressing big problems in planetary science, from chondrule formation to pyroclastic eruptions on the Moon and achondritic bodies, from asteroid disruption to the composition of the Martian surface.

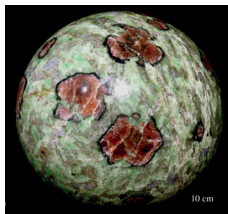
His accomplishments were recognized through awards of the Leonard Medal from the Meteoritical Society, the J. Lawrence Smith Medal of the National Academy of Sciences, and election as a Legends Fellow of the Microanalysis Society, in addition to numerous other accolades including the main belt asteroid Keil and the extraterrestrial mineral keilite, (Fe,Mg)S, named in his honor.

A long time ago someone told me, with astonishment in his voice, "Everything Klaus touches turns to gold." Klaus was an alchemist. He made his own gold through his imagination, ability to synthesize diverse data, hard work, and the ability to motivate research in his group. The real gold, though, goes to all of us who benefitted from his research, leadership, and mentorship, especially those of us who have had the pleasure and honor to work with him and to be his friend.

Jeff Taylor

Cont'd from page 201

or posters, on a wide variety of topics: eclogites and their geodynamic meaning; extreme metamorphism and mantle eclogites; P - T - X conditions estimated from crystal chemistry, experimental petrology, and thermodynamics; rheology and deformation at high-pressure (HP) conditions; geochemistry and fluid-rock interactions; and geochronology and ancient eclogites.



Billiard ball, La Compointrie (Saint-Philbert-de-Grand-Lieu) Kyanite eclogite

It is difficult and quite subjective to summarize the outcomes of such diverse contributions. Over the last 40 years, we have enjoyed a golden age of quantification that has led to remarkable advances in the determination of the P - T - t evolution of HP rocks; we have also experienced a race to the depths, with the discoveries of deeper and deeper HP minerals, such as coesite and diamond. One could think that the characterization of P - T - t paths is now largely routine, but IEC-14 contributions on, e.g., elastic thermobarometry and high-resolution mineral dating attest to the contrary. New research seems to be moving towards issues that have remained quite marginal until now, such as partial melting under HP conditions, the disputed role of tectonic overpressure and stress, the significance of disequilibrium features in terms of kinetics, fluid flow, and its rheological consequences.

Contributions will be presented in a special issue of the *European Journal of Mineralogy*, now open for submissions.

The next IEC is set for 2025 in California.

Samuel Angiboust and Gaston Godard

Website: <https://iec14.sciencesconf.org/>

IEC Merit Awards 2022: Best Talk and Best Poster

Two distinctions were awarded during the International Eclogite Conference.

- **BEST TALK:** T. A. Markmann presented a petrogeochemical model perspective on the interplay between rock transformation and aqueous fluid production in subduction zones. This study is in collaboration with P. Lanari.
- **BEST POSTER:** J. F. Vieira Duarte, on oxide-silicate petrology and geochemistry of subducted hydrous ultramafic rocks beyond antigorite dehydration (Central Alps, Switzerland). This project is in collaboration with T. Pettke, J. Hermann, and F. Piccoli.



FROM LEFT TO RIGHT: J. Gilotti and S. Cuthbert (committee members); S. Angiboust, T. A. Markmann, G. Godard, and C. Chopin (organizing committee).



LEFT: T. Pettke receiving the prize on behalf of J. F. Vieira Duarte from S. Angiboust (organizing committee)

<http://meteoriticalsociety.org>

2022 METEORITICAL SOCIETY TREASURER'S REPORT



Tasha Dunn

The Society's finances continue to be on a sound footing, and both the Operating Fund and our Investment Fund are currently very healthy. A large portion of the operating budget relates to the publication of *Meteoritics and Planetary Science* (*MaPS*), our international monthly journal of planetary science, which covers topics including the origin and history of the Solar System, planets and natural satellites, interplanetary dust and the interstellar medium, lunar samples, meteors, meteorites, asteroids, comets, craters, and tektites.

The *MaPS* journal has been published by Wiley since 2010, and our income from Wiley typically exceeds the expenses of the Editorial Office at the University of Arizona (USA), which is managed by Editor Tim Jull.

Society memberships include subscriptions to *MaPS* and *Elements*. Membership with subscription to only the electronic version of *MaPS* is a popular option, although many of our members still purchase the printed version. To keep up with rising publication costs, dues for members desiring the print copy of the journal were raised this year. Collection of membership dues for 2023 began in October 2022. I would like to encourage members to pay their dues in a timely manner, as this helps greatly with financial planning.

Our Investment Fund includes a number of endowed funds. The Nier Fund supports the annual Nier Prize, which recognizes outstanding research by young scientists in meteoritics and closely allied fields. This year's recipient (2022) is Dr. Arya Udry of the University of Nevada, Las Vegas (USA). The Gordon A. McKay Fund supports the McKay Award, which is presented to the student who gives the best oral presentation at the annual meeting. The 2021 McKay Award was awarded to Amanda Ostwald at the University of Nevada, Las Vegas for her talk, "Nakhlite and chassignite parental melt compositions compared." The newly established Jessberger Fund supports the Elmar K. Jessberger Award, which recognizes outstanding research in the field of isotope cosmochemistry by a mid-career female scientist. The Jessberger Award will be awarded for the first time at the 2022 meeting in Glasgow to Dr. Maria Schönbacher at ETH Zürich (Switzerland).

The Society also has two endowed funds that support member travel to our annual meetings. The Travel for International Members (TIM) Fund supports travel for members from low-income countries, while the O. Richard Norton Fund supports travel for early career scientists. We thank Tim Swindle and Dorothy and John Kashuba for their continued support to these funds.

The General Endowment Fund supports a variety of outreach projects. Over the last year, the general endowment fund has supported the "Forming and Exploring Habitable Worlds" Meeting, to be hosted by the University of Edinburgh (Scotland), and the ATTARIK Foundation, which promotes the science of meteorites in the Arab world and African continent countries. Endowment funds were also used to support travel to the 2021 meeting in Chicago (USA). We always welcome suggestions for ways in which the General Endowment Fund can be utilized to promote the goals of the Society and enrich its activities. Requests for funding from the General Endowment are considered twice annually, on January 15 and June 15. Proposals should be emailed to the secretary (metsosecsecretary@gmail.com). If you have any questions, please contact the chair of the Endowment Committee, Rhian Jones (rhian.jones-2@manchester.ac.uk).



We would like to thank our members and friends of the Society, who generously donated \$55,962 to the various funds during the 2022 fiscal year. Your generous contributions provide direct support that helps strengthen our international community. It is simple to donate to any of our funds when you renew your membership. You can also donate at any time using the following link: <https://meteoritical.org/membership/donate>. Donations made to any of our funds are always allocated only to the specified fund (e.g., donations to the Norton Fund are *only* used to support student travel). You can therefore rest assured that your donations are being used for their intended purposes.

If you have any questions, or would like to renew your membership with a check, please contact the treasurer (tldunn@colby.edu).

2022 MEMBERSHIP REPORT

As of June 2022, the Meteoritical Society comprises 547 regular members, 122 students, 184 retired members, 45 life members, 13 members from developing countries, and 4 complimentary members. This brings us to a grand total of 915 members, an increase of 78 members since 2021, including 44 new student members. Many thanks to Arya Udry for providing these statistics. We have members in 49 countries; however, the statistics show that we still have a lot to do to gain members in many countries and to increase the number of student members. Student memberships are an inexpensive 40 USD and continue to subsidize the registration fee for the Meteoritical Society's Annual Meeting. Student members have the opportunity to apply for travel grants and compete for presentation awards. Students can also attend a Student Reception at the annual Meeting, providing an excellent forum where they can interact with their peers and meet senior scientists in the community. Please encourage your students to join! In addition, the Society does have a mechanism in place to subsidize annual dues for members in low-income countries. Prior approval is required from the Membership Committee for this rate—please refer to our website at <http://www.meteoriticalsociety.org> for more information.

For those wishing to avoid the hassle of paying dues every year, consider a lifetime membership! For more information and details on how to become a member of the Meteoritical Society, please see our Society web page at <https://meteoritical.org/membership/join>.

MEETING INFO

2022	14–19 August	Glasgow, Scotland, UK
2023	13–18 August	Los Angeles, California, USA
2024	Dates TBD	Brussels, Belgium (EU)
2025	Dates TBD	Perth, Australia
2026	Dates TBD	Frankfurt, Germany (EU)

Memberships	Complimentary	Developing Country	Lifetime	Retired	Standard	Student	Totals
Argentina					1		1
Australia				4	15	5	24
Austria			1	2	5		8
Belgium				1	6	3	10
Brazil				1	5	4	10
Canada			3	11	22	7	43
Chile					1	2	3
China		3	2	1	14		20
Colombia		1					1
Costa Rica					1		1
Czechia					2	2	4
Denmark				1	1		2
Estonia					1		1
Finland					3		3
France			3	10	25	8	46
Germany		1	8	15	52	4	80
Greece					2		2
Holy See					2		2
Hong Kong					1		1
Hungary			1		2		3
India		2		1	3	3	9
Ireland				1			1
Italy				3	9		12
Japan				9	71	4	84
Korea (the Republic of)					2		2
Latvia						1	1
Luxembourg				2	1		3
Malaysia					1		1
Mauritania		1					1
Mexico				1			1
Morocco		2					2
Netherlands				1	3	1	5
New Zealand					1		1
Norway				1			1
Poland				1	1		2
Portugal					1		1
Romania		1			2	1	4
Russian Federation					7	1	8
Singapore				1			1
Slovakia					2		2
South Africa	1				2	2	5
Spain				1	8	1	10
Sweden				1	2	3	6
Switzerland			1	5	16	8	30
Turkey					1		1
Ukraine					2		2
United Kingdom			1	10	38	23	72
United States of America	3		25	100	212	37	377
Uruguay					1		1
N/A		2				2	2
Totals	4	13	45	184	547	122	915



Meteoritical Society

<http://meteoriticalsociety.org>

2023 ANNUAL METSOC MEETING INVITATION

You are cordially invited to attend the 86th annual meeting of The Meteoritical Society, which will take place from August 13 through August 18, 2023, at the Luskin Conference Center on the campus of the University of California – Los Angeles (UCLA), USA. The meeting is hosted by UCLA's Department of Earth, Planetary, and Space Sciences, and all METSOC23 events will be held on the UCLA campus in Westwood, California.



On-site conference registration will begin at 2 pm on Sunday, August 13, with a welcome reception commencing at 5pm. Oral and poster sessions will take place at the Luskin Center. The Barringer Invitational Lecture will be held at the Fowler Museum on campus. The annual banquet will be held outdoors on campus on Wednesday evening; we have arranged for it to not rain. There will be a special session on asteroid sample return; proposals for additional special sessions are encouraged. Further details regarding the scientific program will be provided at a future date. Details can be found at <https://metsoc2023-la.com>.

The Luskin Conference Center hosts a full-service hotel in which 200 rooms have been reserved at a reduced rate. All events will be within easy walking distance of Luskin, so there is no need to have a rental car for the week. Of course, there are many other lodging options in LA, with several near the UCLA campus (suggestions will be provided on the website). We are also seeking the possibility of dormitory accommodations for students or those on a tighter budget.

Currently, there are no public health restrictions on gatherings in Los Angeles. We are planning for a mostly in-person meeting, with the possibility of remote participation via live on-line and in-schedule talks. Poster presentations will be in-person only.

Transportation to UCLA from LA's main international airport (LAX) is straightforward. Los Angeles is a dynamic, multi-cultural city with myriad entertainment possibilities. Although hot spells are possible, the weather in mid-August is likely better than what you'll be leaving at home. The mountains, beaches, and wineries of southern and central California are readily accessed with a rental car for pre- or post-conference fun. We encourage you to reserve the dates of August 13–18 on your calendar today, and we look forward to welcoming you to Los Angeles in the summer of 2023!

Kevin McKeegan (mckeegan@epss.ucla.edu),
Ming-Chang Liu, and **Ed Young**

2022 ANNUAL MEETING TRAVEL AWARD WINNERS

The Meteoritical Society would like to congratulate the winners of awards for travel to the 85th Annual Meeting in Glasgow, Scotland, UK. We would also like to thank the sponsors of these awards who every year enable students, early career researchers, and researchers from low-income nations to travel to annual meetings in order to facilitate career-enhancing interactions with a wide array of international society members.

Barringer Crater Company Award

Nicola Allen, Kana Amano, Soukaina Arif, Tarryn Aucamp, Christopher Hamann, Miranda Holt, Grant Hughes, Imene Kerraouch, Mizuha Kikuri, Jane MacArthur, Josefín Martell, Andrea Miedtank, Juulia-Gabrielle Moreau, Chad Peel, Anders Plan, Raiza Quintero, Radhika Saini, Alex Sheen, Amanda Stadermann, Martin Suttle, and Libby Tunney

2022 Brian Mason Award

Yaozhu Li, and Noemi Mészárosóvá

Darryl Pitt/Macovic Collection Travel Award

Simon Anghel, Catherine Harrison, and Sara Motaghian

David B. Ghesling Trust Award

Allison McGraw, and Kalpana Singh Verma

Elsevier Travel Award

Ioana-Lucia Boaca, Tomoya Obase, Ratiba Sahoui, and Zachary Torranó

Meteoritical Society Travel Awards for Early-Career Scientists

Anna Barbaro, David Bekaert, Lisa Krämer Ruggiu, Daniela Krietsch, Clara Maurel, Jennifer Mitchell, Julia Neukampf, Soumya Ray, and Lionel Vacher

Meteoritical Society Travel for International Members Award

Adriana Victoria Araujo Salcedo, Ioannis Baziotis, Hasnaa Chennaoui Aoudjehane, and Shreeya Natrajan

MMGM Student Travel Award

Leonardo Baeza

NASA Planetary Sciences Division Travel Grant

Elana Alevy, Amanda Alexander, Maizey Benner, Laura Chaves, Andrea Distel, Marina Gemma, Jennika Greer, Kana Ishimaru, Mara Karageozian, Ioannis Kouvatsis, Kaitlyn McCain, James McFadden, Amanda Ostwald, Ishita Pal, Daniel Sheikh, and Zoe Wilbur

Planetary Studies Foundation Student Travel Award

Evan O'Neal, and Hope Tornabene

O. Richard Norton Award

Mark Boyd, Melissa Cashion, Victoria Cousins, Lisa Eckart, Juliette Faucher, Cameron Floyd, Arthur Goodwin, Laura Jenkins, Alexander Kling, Nathan Limbaugh, Katarzyna Liszewska, Ryoga Maeda, Virgile Malarewicz, Peter McArdle, Lara Meyer, Moshamat Mijum, Sierra Ramsey, Liza Riches, Randolph Röhlen, Lucas Smith, and Francesca Willcocks

Cont'd on page 351

2023 MSA AWARDEES

MSA would like to congratulate its newest awardees who will be honored at the 2023 Geological Society of America annual meeting in Pittsburgh, PA, USA. That meeting will take place October 15–18, 2023. There will be a luncheon to celebrate the awardees in Pittsburgh, as well as special lectures by the awardees.

Roebing Medal: Georges Calas, Sorbonne Université



The Roebing Medal is the highest award of the Mineralogical Society of America (MSA) for scientific eminence as represented primarily by scientific publication of outstanding original research in mineralogy.

Dana Medal: Razvan Caracas, Université de Lyon



The Dana Medal is intended to recognize sustained outstanding scientific contributions through original research in the mineralogical sciences by an individual in mid-career.

Cont'd from page 348

CALL FOR AWARD NOMINATIONS

Please consider nominating a colleague for one of the Society's awards. Nominations should be sent to the secretary (metsecsec@gmail.com) by January 15 (January 31 for the Service Award and the Pellas-Ryder Award). For more information and details on how to submit a nomination for any of these awards, please see the latest newsletter at the Society website or email the secretary.

The Society gives a number awards each year. The **Leonard Medal** honors outstanding contributions to the science of meteoritics and closely allied fields. The **Barringer Medal and Award** recognize outstanding work in the field of impact cratering and/or work that has led to a better understanding of impact phenomena. The **Nier Prize** recognizes outstanding research in meteoritics and closely allied fields by young scientists. The **Service Award** honors members who have advanced the goals of the Meteoritical Society to promote research and education in meteoritics and planetary science in ways other than by conducting scientific research. The **Paul Pellas–Graham Ryder Award** is given for the best student paper in planetary science and is awarded jointly by the Meteoritical Society and the Planetary Geology Division of the Geological Society of America. The newest society award, the **Elmar Jessberger Award**, will be given to a mid-career female scientist in the field of isotope cosmochemistry.

UPDATED ANNUAL MEETING CALENDAR

2023	86 th Annual Meeting	14–18 August, Los Angeles, California, USA
2024	87 th Annual Meeting	28 July–2 August, Brussels, Belgium (EU)
2025	88 th Annual Meeting	July TBD, Perth, Australia
2026	89 th Annual Meeting	July/August TBD, Frankfurt, Germany (EU)

Distinguished Public Service Medal: Sharon Tahrikheli, American Geosciences Institute



The Distinguished Public Service (DPS) Medal is awarded by the MSA Council to individuals or organizations who have made important contributions to furthering the vitality of the geological sciences, especially but not necessarily in the fields of mineralogy, geochemistry, petrology, and crystallography.

MSA Award: Shaunna Morrison, Carnegie Institution for Science



The Mineralogical Society of America Award is intended to recognize outstanding published contributions to the science of mineralogy by individuals near the beginning of their professional careers.

Cont'd from page 349

Environment, Analysis (2017–2018) and was on the Editorial Board of *Geochemistry: Exploration, Environment, Analysis* (2019–present).

The focus of Professor Renguang Zuo's research is on developing novel methods for processing geochemical survey data and identifying geochemical anomalies associated with mineralization. He has published more than 120 SCI-indexed papers in various international peer-reviewed journals. He is an associate editor for *Journal of Geochemical Exploration*, *Natural Resources Research*, *Ore Geology Reviews*, and *Computers & Geosciences*. He is also a Councilor for the International Association for Mathematical Geosciences and a Fellow of the Society of Economic Geologists.

Dennis Arne (ex officio)



Dennis Arne has 40 years of experience in geology and applied geochemistry. He has overseen regional geochemical exploration programs in the Yukon, British Columbia, Nunavut, and northern Quebec in Canada, the USA, eastern Australia, Suriname, Sudan, and Laos. He was Managing Director and Principal Consultant – Geochemistry of CSA Global Canada until late 2017, General Manager and

Principal Consultant – Geochemistry for Revelation Geoscience (purchased by CSA Global in 2012), Principal Consulting Geochemist with ioGlobal (now Reflex Geochemistry), and formerly Senior Geochemist with Geoscience Victoria (now Geological Survey of Victoria, Australia). Dennis is currently director and principal consulting geochemist at Telemark Geosciences and was, until recently, the Director of Exploration for E79 Resources. He is a Fellow and past President of the Association of Applied Geochemists, a member and registered Professional Geoscientist (Geochemistry) of the Australian Institute of Geoscientists, and a registered Professional Geoscientist in British Columbia, Canada.

<http://meteoriticalsociety.org>

2022 ANNUAL MEETING REPORT

The 85th Annual Meeting of the Meteoritical Society (Met Soc) was held in August 2022 in Glasgow, Scotland (UK) as a fully hybrid meeting. The in-person meeting venue was at the Scottish Event Campus in central Glasgow, overlooking the River Clyde. Social events were also hosted within the Hunterian Museum at the University of Glasgow, the City Chambers, and the Kelvingrove Museum. Despite ongoing COVID-19 pandemic-related travel restrictions, in-person participants numbered 442 (including press, exhibitors, and accompanying persons). There were 89 virtual attendees, resulting in a 83% to 17% split for in-person versus virtual attendance—531 participants in total. Virtual talks were given live, or prerecorded where internet restrictions prevented live streaming. All in-person talks were live-streamed on the virtual platform, and all talks were recorded for online viewing by registered participants for one month after the meeting. All posters were also uploaded to the virtual platform, and the option for virtual or live poster presentations was available—virtual and live poster sessions were staggered to avoid clashes. This platform was designed to enable participants to view all presentations of interest, even if they were held in parallel. The hybrid meeting style provided access for those who were not able to travel because of the pandemic, or those who didn't have the financial means to attend in person. All participants were encouraged to wear masks within the session rooms at the meeting venue except when presenting or eating/drinking. Lateral flow COVID-19 test kits were available at all times during the meeting via the reception desk.

The program included two parallel oral sessions, and staggered virtual and in-person poster sessions on the Tuesday and Thursday evenings. The Barringer Lecture was given by Elliot Sefton-Nash from the European Space Agency, and was entitled "Early Mars: A world record." Three pre-conference workshops were organized: Workshop 1: Fireballs and their detection; Workshop 2: Back to the Future – Major findings in the field of impact cratering and unresolved issues; and Workshop 3: Atom probe tomography and correlative microscopy of meteorites and returned planetary materials.

The local organizing committee included Lydia Hallis, Luke Daly, Sammy Griffin, Annemarie Pickersgill, Aine O'Brien, and Evangelos Christou from the University of Glasgow, as well as Paul Savage and Robert Steele from the University of St. Andrews and Caroline Smith from the Natural History Museum, London. Martin Lee (University of Glasgow) was the chair of the scientific organizing committee, which included local and international committee members. The travel award committee was chaired by Sammy Griffin (University of Glasgow). Linda Garcia (LPI) and her team provided outstanding support for organizing this meeting. The meeting organization was very challenging, having been cancelled in 2020, and with the continuing uncertainty and increased costs resulting from pandemic-related uncertainties in 2021 and 2022. The author would like to thank all who were involved for their hard work and persistence, and the sponsors and exhibitors (Cameca, Nu, Oxford Instruments, Purdue University, and Thermo-Fisher Scientific) for their financial support. We would also like to thank all those attendees who took the time to fill in the post-conference survey, feedback from which will help improve future MetSoc meetings.

Lydia Hallis, Chair of the MetSoc 2022
Local Organization Committee



Meteoritical Society Past President Mini Wadhwa, President Brigitte Zanda, and Vice-President Nancy Chabot address the membership at the annual banquet.

SOCIETY AWARD WINNERS

The Society now gives five major awards each year. For more information on individual awards, please see the Call for Nominations and the Society webpage.

LEONARD MEDAL, the Society's highest and oldest award, is given to individuals who have made outstanding original contributions to the science of meteoritics or closely allied fields. It is named for Frederick C. Leonard who was a founder and the first president of the Society. The 2022 winner is **Kevin McKeegan** (University of California, Los Angeles, USA). The Meteoritical Society recognizes Kevin with its Leonard Medal for his work on "the microanalysis of isotopes including the discovery of deuterium enrichments in interplanetary dust particles (IDPs), oxygen isotopes in the sources of Ca-, Al-rich inclusions (CAIs), discovery of extinct Be-10 in CAIs implying particle irradiation in the Solar System, the oxygen isotope composition of the first CAI fragment from Comet Wild 2, and the measurement of the oxygen isotope composition of the Sun from the NASA Genesis Mission obtained by developing the new MegaSIMS instrument." The citation was given by Marc Chaussidon.



BARRINGER MEDAL AND AWARD, sponsored by the Barringer Crater Company, were created in memory of D. Moreau Barringer, Sr, and his son D. Moreau Barringer, Jr. The award is given for outstanding work in the field of impact cratering. This year, the Barringer Award is given to **Gareth Collins** (Imperial College, London) and **Kai Wunnemann** (Freie Universität Berlin; Museum für Naturkunde) as the first-ever joint award for their collaborative development of the iSALE hydrocode and their influential scientific work in understanding and simulating the physics of impact crater formation. The citation was given by Thomas Kenkmann.



NIER PRIZE: This year's winner of the Nier Prize for young scientists in the field of Meteoritics is **Arya Udry** (University of Nevada, Las Vegas, USA). Arya receives this award for her "significant contributions in the petrology and chemistry of Martian meteorites, for advancing our understanding of the crystallization sequences of Martian magmas and for being an effective public communicator of the science." The citation was given by Hap McSween.



SERVICE AWARD: **Randy Korotev** of Washington University in St Louis (USA) is the winner of this year's Meteoritical Society Service Award. Randy receives this award "for his outstanding contributions to the classification of lunar meteorites, for his creation and operation of the go-to, website for lunar meteorites and literature on lunar science, and for his extensive public outreach and education efforts in meteorites." The citation was given by Ryan Zeigler.



The **GORDON MCKAY AWARD** and **WILEY-BLACKWELL AWARDS** from the 2022 meeting in Glasgow will be announced in a later issue of *Elements*.

IN MEMORIAM – ERIN L. WALTON (1978–2022)

Erin Lindsey Walton Hauck passed away on 21 September 2022 at the age of 44 following a battle with cancer. She was born on 4 August 1978 in Fredericton, New Brunswick, Canada. Erin grew up with a love and respect for the natural world that would continue all her life. During her undergraduate studies at the University of New Brunswick (UNB), she discovered her passion for geology and the cosmos, which led her to mineralogy, meteorites, and impact processes.

Characterizing the complex shock effects produced during impact events was the overarching theme of her research. Following her documentation of the Benton LL6 chondrite for her undergraduate Honours thesis (the only meteorite known from Atlantic Canada), she continued to her PhD with John Spray at the Planetary and Space Science Centre, UNB. This involved a study of the effects of shock in Martian meteorites—a theme that would be central to her scientific contributions. Her dissertation was nominated by UNB as one of the best in Canada, and she was recognized as one of the brightest university researchers by MacLean's Magazine in 2004. In 2005, she was competitively awarded an NSERC Postdoctoral Fellow position, which she took up in the Department of Earth and Atmospheric Sciences at the University of Alberta. In 2007, she secured a Space Science Fellowship from the Canadian Space Agency, which she used to continue her position at the University of Alberta until 2009. At Alberta, she took advantage of experimental petrology facilities—and more microbeam methods—to explore and constrain the crystallization conditions of impact melt pockets in Martian meteorites. Working in collaboration with Chris Herd, she published a series of papers that provided insights into how impact melt pockets formed, as well as the mechanics of implantation of the Martian atmosphere.

In 2009, she secured a faculty position at Grant MacEwan College (now MacEwan University), where she quickly became known for being an excellent instructor. In her role, she developed/co-developed 10 new courses for the Physical Sciences degree program. All this



was achieved while maintaining a full teaching load, securing funding for a Raman instrument, sustaining an active, NSERC-funded research program, and supervising some 20 student projects! Most of these were undergraduates, but also included several Masters students, co-supervised with Chris Herd at the University of Alberta, or with Cliff Shaw and John Spray at UNB, thanks to her adjunct professor status at both institutions. She was actively co-supervising some of these student projects as recently as August 2022.

Erin's research into shock effects expanded to include other meteorite types, and terrestrial impact structures, including the Steen River (Alberta) impact structure, which had not been extensively studied since the 1970s. In 2019, she was awarded a MacEwan University Board of Governors Research Chair in recognition of her research. Erin leaves behind a body of work in the peer-reviewed literature that lays the groundwork for countless future research projects, and will continue to inform and inspire future research.

Erin had an outgoing and endearing personality. She played key roles in the organization of the 76th Annual Met Soc meeting in Edmonton, Canada, in 2013, including ensuring that social events were a good time! She was a joy to collaborate and interact with. She cared about her students and was a much-appreciated mentor and role model. We will miss her contributions to science and her warm and friendly presence. VERSION OF HERD ET AL. (2022), [HTTPS://DOI.ORG/10.1111/Maps.13928](https://doi.org/10.1111/Maps.13928), ADAPTED FOR *ELEMENTS*.

Christopher Herd¹, John Spray², Tom Sharp³

- 1 Department of Earth and Atmospheric Sciences, University of Alberta, Edmonton, Canada
- 2 Planetary and Space science Centre, University of New Brunswick, Fredericton, Canada
- 3 School of Earth and Space Exploration, Arizona State University, Tempe, USA

CALL FOR AWARD NOMINATIONS

Please consider nominating a colleague for one of the Society's awards. Nominations should be sent to the society secretary (metsosec@gmail.com) by January 15 (January 31 for the Pellas-Ryder Award and the Service Award). For more information and details on how to submit a nomination for any of these awards, please see the latest Newsletter at the Society website or email the secretary.

UPDATED ANNUAL MEETING CALENDAR

2023	(86 th Annual Meeting)	14–18 August; Los Angeles, California, USA.
2024	(87 th Annual Meeting)	28 July–2 August; Brussels, Belgium (EU).
2025	(88 th Annual Meeting)	July TBD; Perth, Australia.
2026	(89 th Annual Meeting)	July/August TBD; Frankfurt, Germany (EU).

RENEW YOUR MEMBERSHIP NOW!

Please renew by March 31, 2023; after that date, a \$15 late fee will be assessed. You can renew online at <https://meteoritical.org/society/membership>.