

## The Mineralogy of Meteorites – an independent survey

Jeffrey de Fourestier<sup>1</sup>, Graham C. Wilson<sup>2\*</sup> and Richard K. Herd<sup>3</sup>

<sup>1</sup> Consultant, Gatineau (Aylmer), Québec ; <sup>2</sup> Turnstone Geological Services Limited, P.O. Box 1000, Campbellford, Ontario K0L 1L0, [turnstonerocks@yahoo.ca](mailto:turnstonerocks@yahoo.ca) ; and

<sup>3</sup> Curator, National Meteorite Collection (Retired), Ottawa

For GAC/MAC session SS-14, *Meteorites and impact sites*,  
Brandon, Manitoba, 19-22 May 2024

\* Presenter - Preferred delivery mode: talk

A detailed review of the mineralogy of meteorites (and other extraterrestrial materials) has been under construction since 2015. It is hoped to deliver the result to the publisher in 2025. For each mineral, there is an abstract in a set format, with basic chemical and structural data, systematic data such as name, type locality and type material (where known), and notable physical properties as they relate to meteorites. There follows a note of each class of meteorite in which the mineral is known. A “comments” section may add miscellaneous data, including notes of occurrences in Moon rocks and/or asteroidal or cometary sample returns.

There are currently some 155 “off-world” minerals first described in Moon rocks and meteorites, and some 277 species previously described on Earth, for approximately 432 minerals (7.2% of 6,006 IMA-approved species as of January 2024). The “heavenly bodies index” follows an LPI tradition, and will list all the meteorites mentioned in the abstracts: 500-plus are cited for the first 150 “Earth” minerals.

The authors have contrasting fields of expertise that include systematic mineralogy (JdF), meteorite petrology (RKH) and Earth-science literature (GCW). The latter’s MINLIB bibliographic database has been mined extensively for the *circa* 64% of species first described on Earth, with >12,000 records relevant to meteorites and nucleosynthesis, planetary science, Moon rocks and impact events (some 8,400 -- 9% of the database -- are relevant to meteorites and their payloads of cosmic clues).

The multidisciplinary field of meteoritics has spawned a vast trove of books and journal articles. The new volume’s structure will be akin to a number of systematic and topographic mineralogy texts. While it is compiled from the literature, and is thus something of an homage to the small but active meteoritics community, the structure of the work separates it from the many existing reviews.