

## **A comment on “An evolutionary system of mineralogy: Proposal for a classification of planetary materials based on natural kind clustering”**

**FRÉDÉRIC HATERT<sup>1,\*</sup>, STUART J. MILLS<sup>2</sup>, FRANK C. HAWTHORNE<sup>3</sup>, AND MIKE S. RUMSEY<sup>4</sup>**

<sup>1</sup>Laboratory of Mineralogy, University of Liège, Quartier Agora, Allée du six Août 14, B-4000 Liège, Belgium

<sup>2</sup>Geosciences, Museums Victoria, GPO Box 666, Melbourne, Victoria 3001, Australia

<sup>3</sup>Department of Geological Sciences, University of Manitoba, Winnipeg, Manitoba R3T 2N2, Canada

<sup>4</sup>Department of Earth Sciences, Natural History Museum, Cromwell Road, London SW7 5BD, U.K.

### **ABSTRACT**

The classification and nomenclature of mineral species is regulated by the Commission on New Minerals, Nomenclature and Classification of the International Mineralogical Association (IMA-CNMNC). This mineral species classification is necessary for Earth Sciences, as minerals constitute most planetary and interstellar materials. Hazen (2019) has proposed a classification of minerals and other Earth and planetary materials according to “natural clustering.” Although this classification is complementary to the IMA-CNMNC mineral classification and is described as such, there are some unjustified criticisms and factual errors in the comparison of the two schemes. It is the intent of the present comment to (1) clarify the use of classification schemes for Earth and planetary materials, and (2) counter erroneous criticisms or statements about the current IMA-CNMNC system of approving proposals for new mineral species and classifications.

**Keywords:** Classification, nomenclature, mineral species, IMA-CNMNC, “mineral kinds”