



American Mineralogist

Vol. 102, No. 8

Journal of Earth and Planetary Materials

August 2017

LETTERS

- 1759 **Mn-Fe systematics in major planetary body reservoirs in the solar system and the positioning of the Angrite Parent Body: A crystal-chemical perspective**
James J. Papike, Paul V. Burger, Aaron S. Bell, and Charles K. Shearer
- 1763 **Dolomite-IV: Candidate structure for a carbonate in the Earth's lower mantle**
Marco Merlini, Valerio Cerantola, G. Diego Gatta, Mauro Gemmi, Michael Hanfland, Ilya Kupenko, Paolo Lotti, Harald Müller, and Li Zhang

INVITED CENTENNIAL ARTICLE

- 1573 **How many boron minerals occur in Earth's upper crust?**
Edward S. Grew, Grethe Hystad, Robert M. Hazen, Sergey V. Krivovichev, and Liudmila A. Gorelova

OUTLOOKS IN EARTH AND PLANETARY MATERIALS

- 1588 **Network analysis of mineralogical systems**
Shaunna M. Morrison, Chao Liu, Ahmed Eleish, Anirudh Prabhu, Congrui Li, Jolyon Ralph, Robert T. Downs, Joshua J. Golden, Peter Fox, Daniel R. Hummer, Michael B. Meyer, and Robert M. Hazen

SPECIAL COLLECTION: FROM MAGMAS TO ORE DEPOSITS

- 1597 **Geochemistry of the Cretaceous Kaskanak Batholith and genesis of the Pebble porphyry Cu-Au-Mo deposit, Southwest Alaska**
Nansen H. Olson, John H. Dilles, Adam J.R. Kent, and James R. Lang
- 1622 **Physicochemical controls on bismuth mineralization: An example from Moutoulas, Serifos Island, Cyclades, Greece**
Michalis Fitros, Stylianos F. Tombros, Anthony E. Williams-Jones, Basilios Tsikouras, Eleni Koutsopoulou, and Konstantin Hatzipanagiotou

SPECIAL COLLECTION: EARTH ANALOGS FOR MARTIAN GEOLOGICAL MATERIALS AND PROCESSES

- 1632 **Geochemistry and mineralogy of a saprolite developed on Columbia River Basalt: Secondary clay formation, element leaching, and mass balance during weathering**
Leslie L. Baker and Owen Kelly Neill

SPECIAL COLLECTION: APATITE: A COMMON MINERAL, UNCOMMONLY VERSATILE

- 1646 **An ab-initio study of the energetics and geometry of sulfide, sulfite, and sulfate incorporation into apatite: The thermodynamic basis for using this system as an oxybarometer**
YoungJae Kim, Brian Konecke, Adrian Fiege, Adam Simon, and Udo Becker

SPECIAL COLLECTION: DYNAMICS OF MAGMATIC PROCESSES

- 1657 **The role of modifier cations in network cation coordination increases with pressure in aluminosilicate glasses and melts from 1 to 3 GPa**
Saurav Bista and Jonathan F. Stebbins

ARTICLES

- 1667 **Nitrides and carbonitrides from the lowermost mantle and their importance in the search for Earth's "lost" nitrogen**
Felix Kaminsky and Richard Wirth
- 1677 **Accounting for the species-dependence of the 3500 cm⁻¹ H₂O₁ infrared molar absorptivity coefficient: Implications for hydrated volcanic glasses**
Iona M. McIntosh, Alexander R.L. Nichols, Kenichiro Tani, and Edward W. Llewellyn
- 1690 **A finite strain approach to thermal expansivity's pressure dependence**
George Helffrich
- 1696 **Ilmenite breakdown and rutile-titanite stability in metagranitoids: Natural observations and experimental results**
Samuel Angiboust and Daniel Harlov
- 1709 **Single-crystal equations of state of magnesiowüstite at high pressures**
Gregory J. Finkelstein, Jennifer M. Jackson, Wolfgang Sturhahn, Dongzhou Zhang, E. Ercan Alp, and Thomas S. Toellner
- 1718 **Analysis of erionites from volcanoclastic sedimentary rocks and possible implications for toxicological research**
Martin Harper, Alan Dozier, Julie Chouinard, and Robyn Ray
- 1727 **Reconstructive phase transitions induced by temperature in gmelinite-Na zeolite**
Alberto Alberti, Giuseppe Cruciani, and Annalisa Martucci
- 1736 **Smoking gun for thallium geochemistry in volcanic arcs: Nataliyamalikite, Tll, a new thallium mineral from an active fumarole at Avacha Volcano, Kamchatka Peninsula, Russia**
Victor Okrugin, Michael Favero, Amelia Liu, Barbara Etschmann, Ekaterina Plutachina, Stuart Mills, Andrew G. Tomkins, Mariaya Lukasheva, Vladimir Kozlov, Svetlana Moskaleva, Mikhail Chubarov, and Joël Brugger
- 1747 **How to facet gem-quality chrysoberyl: Clues from the relationship between color and pleochroism, with spectroscopic analysis and colorimetric parameters**
Ziyin Sun, Aaron C. Palke, Jonathan Muyal, and Robison McMurtry
- 1767 **BOOK REVIEW**



GeoScienceWorld
Participating Publisher

SPONSORING BENEFACTORS
Cargille Laboratories
Excalibur Mineral Corporation

Gemological Institute of America
Vulcan Materials—Corporate Office
W.R. Grace & Co.

CONTRIBUTING BENEFACTORS
Bruker AXS Inc. (WI)