



## LETTERS

- 1478 Identification of randomly interstratified illite/smectite with basal peak widths**  
Il Mo Kang, Myung Hun Kim, Yungoo Song, and Hi-Soo Moon

## ARTICLES

- 1201 Hydrothermal synthesis of hematite spherules and jarosite: Implications for diagenesis and hematite spherule formation in sulfate outcrops at Meridiani Planum, Mars**  
D.C. Golden, D.W. Ming, R.V. Morris, and T.G. Graff
- 1215 Concentric slow cooling of a low-*P*-high-*T* terrane: Evidence from 1600–1300 Ma mica dates in the 1780–1700 Ma Black Hills Orogen, South Dakota, U.S.A.**  
Peter S. Dahl and Kenneth A. Foland
- 1230 Monazite ages from carbonatites and high-grade assemblages along the Kambam Fault (Southern Granulite Terrane, South India)**  
Elizabeth J. Catlos, Chandra S. Dubey, and Poovalingam Sivasubramanian
- 1245 Forward modeling of the effects of mixed volatile reaction, volume diffusion, and formation of submicroscopic exsolution lamellae on calcite-dolomite thermometry**  
Thomas Müller, Lukas P. Baumgartner, C. Tom Foster Jr., and Gregory T. Roselle
- 1260 A low-temperature phase diagram for ilmenite-rich compositions in the system Fe<sub>2</sub>O<sub>3</sub>-FeTiO<sub>3</sub>**  
Benjamin P. Burton, Peter Robinson, Suzanne A. McEnroe, Karl Fabian, and Tiziana Boffa Ballaran

- 1273 Dehydrogenation of kaersutitic amphibole under electron beam excitation recorded by changes in Fe<sup>3+</sup>/ΣFe: An EMP and SIMS study**  
C. Wagner, E. Deloule, M. Fialin, and P.L. King
- 1282 Protonation in germanium equivalents of ringwoodite, anhydrous phase B, and superhydrous phase B**  
Sylvia-Monique Thomas, Monika Koch-Müller, Volker Kahlenberg, Rainer Thomas, Dieter Rhede, Richard Wirth, and Bernd Wunder
- 1295 Andreyivanovite: A second new phosphide from the Kaidun meteorite**  
Michael Zolensky, Matthieu Gounelle, Takashi Mikouchi, Kazumasa Ohsumi, Loan Le, Kenji Hagiya, and Osamu Tachikawa
- 1300 The crystal chemistry of whitlockite and merrillite and the dehydrogenation of whitlockite to merrillite**  
John M. Hughes, Bradley L. Jolliff, and John Rakovan
- 1306 Single-crystal elastic properties of (Mg<sub>0.987</sub>,Fe<sub>0.013</sub>)O to 9 GPa**  
H.J. Reichmann, S.V. Sinogeikin, and J.D. Bass
- 1312 Stoichiometry of synthetic ulvöspinel single crystals**  
Ferdinando Bosi, Ulf Hålenius, and Henrik Skogby
- 1317 Thermal behavior and structural transformation in the chabazite-type zeolite willhendersonite, KCaAl<sub>3</sub>Si<sub>3</sub>O<sub>12</sub>·5H<sub>2</sub>O**  
R.X. Fischer, V. Kahlenberg, C.L. Lengauer, and E. Tillmanns
- 1326 The kinetics and mechanisms of schwertmannite transformation to goethite and hematite under alkaline conditions**  
Lois E. Davidson, Samuel Shaw, and Liane G. Benning

- 1338 Crystal chemistry of the mixed-layer sequence talc–talc-smectite–smectite from submarine hydrothermal vents**  
Javier Cuadros, Vesselin M. Dekov, and Saverio Fiore
- 1349 Crystal chemical and structural characterization of fibrous tremolite from Susa Valley, Italy, with comments on potential harmful effects on human health**  
Paolo Ballirano, Giovanni B. Andreozzi, and Girolamo Belardi
- 1356 Thermodynamic properties of CaTh(PO<sub>4</sub>)<sub>2</sub> synthetic cheralite**  
Karin Popa, Tatiana Shvareva, Lena Mazeina, Eric Colineau, Franck Wastin, Rudy J.M. Konings, and Alexandra Navrotsky
- 1363 A computational study of order-disorder phenomena in Mg<sub>2</sub>TiO<sub>4</sub> spinel (qandilite)**  
Erika J. Palin, Andrew M. Walker, and Richard J. Harrison
- 1373 Mineralogical characterization of silica sinters from the El Tatio geothermal field, Chile**  
M. Garcia-Valles, J.L. Fernandez-Turiel, D. Gimeno-Torrente, J. Saavedra-Alonso, and S. Martinez-Manent
- 1384 Influence of multi-electron excitation on EXAFS spectroscopy of trivalent rare-earth ions and elucidation of change in hydration number through the series**  
Atsuyuki Ohta, Hiroyuki Kagi, Hiroshi Tsuno, Masaharu Nomomura, and Iwaoao Kawabe
- 1393 Pressure-induced over-hydration and water ordering in gismondine: A synchrotron powder diffraction study**  
Silvia Ori, Simona Quartieri, Giovanna Vezzalini, and Vladimir Dmitriev
- 1404 <sup>57</sup>Fe Mössbauer study of the oxidation state of iron in stilpnomelane from granite pegmatites in Poland**  
D. Malczewski and E. Popiel
- 1412 Constraints on structural models of ferrihydrite as a nanocrystalline material**  
D.G. Rancourt and J.-F. Meunier
- 1418 Pb<sup>+</sup> irradiation of synthetic zircon (ZrSiO<sub>4</sub>): Infrared spectroscopic investigation**  
Ming Zhang, Lynn A. Boatner, Ekhard K.H. Salje, S. Honda, and Rodney C. Ewing
- 1424 Equation of state and crystal structure of a new germanate post-titanite phase**  
Fabrizio Nestola, Péter Németh, Ross J. Angel, and Peter R. Buseck
- 1429 Synthetic hypersilicic Cl-bearing mica in the phlogopite-celadonite join: A multimethodical characterization of the missing link between di- and tri-octahedral micas at high pressures**  
Sabrina Nazzareni, Paola Comodi, Luca Bindi, Oleg G. Safonov, Yuriy A. Litvin, and Leonid L. Perchuk
- 1437 The effect of crystal-melt partitioning on the budgets of Cu, Au, and Ag**  
Adam C. Simon, Philip A. Candela, Philip M. Piccoli, Michael Mengason, and Leah Englander
- 1449 Thermodynamics of dehydration in analcime: Absorption calorimetry and equilibrium observations**  
Jie Wang and Philip S. Neuhoff
- 1460 Accommodation of the carbonate ion in fluorapatite synthesized at high pressure**  
Michael E. Fleet and Xi Liu
- 1470 Unusual Al-Si ordering in calcic scapolite, Me<sub>79.6</sub>, with increasing temperature**  
Sytle M. Antao and Ishmael Hassan
- 1481 BOOK REVIEW**
- 1483 ERRATUM**