

# Curriculum Vitae of Nancy L. Ross

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## EDUCATION

Ph.D. 1985 Arizona State University, Geological Sciences  
M.S. 1981 University of British Columbia, Geological Sciences  
B.S. 1979 Virginia Polytechnic Institute and State University, Geological Sciences

## PROFESSIONAL EXPERIENCE

2011-2017 Head, Department of Geosciences, Virginia Tech  
2004-2011 Associate Dean for Research, Graduate Studies, and Outreach, College of Science, Virginia Tech  
2000-present Professor, Department of Geosciences, Virginia Tech  
1994-2000 Reader, Department of Geological Sciences, University College London  
1988-1994 Lecturer, Department of Geological Sciences, University College London  
1986-1988 Postdoctoral Fellow, Geophysical Laboratory, Carnegie Institution of Washington  
1985-1986 Postdoctoral Research Associate, Department of Earth and Space Sciences, State University of New York at Stony Brook  
1981-1985 Graduate Research Assistant, Department of Geology, Arizona State University  
1979-1981 Graduate Teaching Assistant, Department of Geological Sciences, University of British Columbia

## RESEARCH INTERESTS

- Lattice dynamics of minerals
- Structures, equations of state, and phase transitions in minerals and related materials (including complex hybrid materials) at high pressure
- Thermodynamic properties of water adsorbed on surfaces of metal oxide nanoparticles
- Role of chemical bonding in minerals

## PROFESSIONAL SOCIETIES

- American Association for Advancement of Science
- American Ceramic Society
- American Chemical Society
- American Crystallographic Association
- American Geophysical Union
- Geochemical Society
- Geological Society of America
- Mineralogical Society of America

## HONORS AND AWARDS

- Roebling Medal, Mineralogical Society of America, 2024
- Fellow of American Association for Advancement of Science (AAAS), 2024
- Fellow of Geological Society of America, 2016
- Honorary Fellow of Società di Mineralogia e Petrologia, Italy, 2014
- Mineralogical Society of America's Distinguished Lecturer, 2011-2012
- President of Mineralogical Society of America, 2009-10
- Vice President of Mineralogical Society of America, 2008-9
- Elected to Council of Mineralogy Society of America, 2001
- Nuffield Foundation Science Fellowship, 1994
- Fellow of Mineralogical Society of America, 1991
- Carnegie Institution Postdoctoral Fellowship, 1987
- Arizona State University Graduate College Distinguished Student Award, 1984
- University of British Columbia Graduate Fellowship, 1980
- Graduated *summa cum laude*, Virginia Polytechnic Institute & State University, 1979
- Outstanding Senior Award in Geological Sciences, Virginia Polytechnic Institute & State University, 1979
- Member *Phi Sigma Kappa*, 1978
- Member of *Phi Beta Kappa*, 1978

## INVITED AND KEYNOTE LECTURES

- Invited lecture (“Why Geochemists Need Neutrons”) Workshop on Advanced Neutron Scattering for Earth and Planetary Science, Goldschmidt, Honolulu, Hawaii, July 9-15, 2022.
- Invited lecture (“Lattice Dynamics of Flexible Framework Structures: Insights from Inelastic Neutron Scattering”) 85th Annual Meeting of Southeastern Section of American Physical Society (SESAPS) Knoxville, TN, USA, Nov. 8-10, 2018.
- Invited lecture (“The Role of Lattice Vibrations in the Energy Landscape of Materials”), Goldschmidt Meeting, Boston, MA, USA, August 12-17, 2018.
- Invited lecture (“Energetics of Nanomaterials: Insights from Inelastic Neutron Scattering”), SERMACS, American Chemical Society (2014) October 16-19, 2014, Nashville, TN.

- Keynote lecture (“Exploring confined water on surfaces of metal-oxide nanoparticles with neutrons”), 2014 Goldschmidt Meeting, Goldschmidt Conference, June 8-13, 2014, Sacramento, CA
- Invited lecture (“The Thermodynamic Properties of Alumina Nanoparticles”), Amer. Conference on Neutron Scattering (ACNS), June 1-5, 2014, Knoxville, TN
- Invited lecture, International Graduate School on “Structure, Reactivity and Properties of Oxide Materials” funded by the Bavarian Elite Programme, 2011
- Invited lecture (“Impact of Neutrons in Earth Sciences”), ACS, 2005
- Invited lecture to NESE (“Neutrons at the frontier of Earth Sciences and the Environment) symposium, EGU, 2005
- Invited lecture to International School of Crystallography, 34<sup>th</sup> course: High Pressure Crystallography, "Ettore Majorana" Centre for Scientific Culture, Erice, Sicily, 2003
- Keynote lecture at 18<sup>th</sup> Meeting of the International Mineralogical Association, 2002

## PROFESSIONAL SERVICE

- Member of MSA’s Financial and Audit Committee (2023-2025)
- Co-convenor 2023 Goldschmidt Meeting, Session 6b: Geochemistry from the Nanoscale to Macroscale [A Celebration of Alex Navrotsky’s 80th Birthday]
- Member of MSA’s Distinguished Public Service Medal Committee (2022-2024)
- Member of Advisory Board for Second Target Station at Spallation Neutron Source (SNS), Oak Ridge National laboratory (2021-present)
- Member of Neutron Advisory Board (NAB) for Oak Ridge National Laboratory (ORNL) (2020-present)
- Chair, 2020 Review of the Diffraction Instrument Suites at the Spallation Neutron Source (SNS) and High Flux Isotope Reactor (HFIR) at Oak Ridge National Laboratory (ORNL)
- Principal Editor of *Elements* (2017-2020)
- Chair, search committee for Mineralogical Society of America’s Executive Director
- Member of the French Society of Mineralogy and Crystallography committee for the SFMC Merit Award
- Co-Convenor, 2018 Goldschmidt Meeting, Session 06j: Bright Future – Recent Methodological and Instrumentation Advancements for Micro- to Nano-Analysis in Earth and Planetary Science
- Member of MSA’s Roebling Committee (2017-2020)
- Chair, Single Crystal Neutron Diffraction Review, ORNL (2017)
- ORNL Neutron Sciences Science Review Committee (2016-present)
- Invited member of Committee of Visitors (COV) of DOE's Office of Workforce Development for Teachers and Scientists (WDTS) (2016-17)
- Invited member of search committee for Director of Carnegie Institution of Washington's Geophysical Laboratory (2106-17)
- Chair, MSA’s Nominations Committee for Fellows (2016)
- Theme Chair, Mineralogy and Mineral Physics, Goldschmidt 2015 (Aug. 16-21, Prague, CZ)
- IMA Medal Committee (2016)
- NSF CSEDI panel member (March 6, 2015)

- Chair, COMPRES Annual Meeting (Stevenson, WA, June 2014)
- External Review Member of Department of Geological Sciences, Binghamton University (2014)
- ORNL Neutron Sciences Science Review Committee (2013- 2016)
- DOE Lujan Center Review Committee (2013)
- Member of International Mineralogical Association (IMA) Medal Committee (2013-present)
- Co-convener (w/ M. Gunter) of “Bloss Mineralogical Session” Annual Meeting of Geological Society of America (2012)
- Member of COMPRES Executive Committee (2010-13)
- Member of Neutron Scattering Science Review Committee, Oak Ridge National Laboratory, 2010-2012
- Member of International Program Committee (IPC) of Goldschmidt 2010
- Member of National Academies’ Committee on Seismology and Geodynamics, 2007-11
- Member of Mineralogical Society of Great Britain and Ireland’s Awards Selection Committee (2009-2011)
- Co-convener (w/ G. Brown, A. Kavner and G. Waychunas) of “Frontiers in Mineral Sciences” session at 2009 Annual Meeting of Geological Society of America
- Mineralogical Society of America Meetings Coordinator 2009-2010
- Chair of Nominations Committee for COMPRES, 2009
- Member of U.S. Department of State’s National Screening Committee for Fulbright International Science and Technology Awards for Outstanding Foreign Students, 2007-2009
- Board of Reviewing Editors of *Science*, 2005-8
- Elected Chair of the Infrastructure Development Committee of COMPRES, 2004-8
- Co-convener (with David Cole, ORNL) of special session “Neutron Applications in Geochemistry and Mineralogy”, 2008 Goldschmidt Meeting, Vancouver, July 13-18, 2008
- Member of Board of Reviewing Editors for *Science*, 2005-8
- Instrument Advisory Team (IAT) of quasi-Laue diffractometer IMAGINE at HFIR, Oak Ridge, 2007-
- Co-convener (with Rudy Wenk, UC Berkeley) of Mineralogical Society of America’s workshop on “Neutron Scattering in the Earth Sciences”, Dec. 7-9, 2006, Emoryville, CA.
- Co-convener (with Rebecca Lange, Univ. Michigan) of special session “Thermodynamics in Geochemistry, Petrology, and Mineral Physics”, AGU 2006 Fall Meeting.
- Member of 2005 IUCr High-pressure Commission, 2005-
- Member of *Elements* Advisory Board, 2004-7
- Chair of Infrastructure Committee, COMPRES, 2004-8
- Member of SNAP (Spallation of Neutrons At Pressure) Executive Committee, 2003-2008
- Chair, Dana Award Committee, Mineralogical Society of America, 2004-5
- Appointed U.S. representative to International Mineralogical Association’s Commission on Physics and Chemistry of Minerals, 2004-

- Co-convenor of topical session at 2003 Geological Society of America Meeting “Impact of Crystal Chemistry in Earth Sciences: A tribute to C.T. Prewitt”
- Elected member of Infrastructure Committee, COMPRES, 2003-5
- Elected member of SNS & HFIR User's Group (SHUG), science advisory group to Oak Ridge National Laboratory, 2002-4
- Co-organizer of workshop: “Neutrons in Solid State Chemistry and Earth Sciences, Today and Tomorrow”, March 2003, Oak Ridge, TN (co-organizer, A. Wilkinson, Georgia Tech)
- Chair of COMPRES (Consortium for Material Properties Research in Earth Science) committee to promote Neutron Scattering in Earth Sciences, 2002-7
- Council member of Mineralogical Society of America, 2002-4
- Chair, Crystallographic Research Award Committee, Mineralogical Society of America, 2002-4
- Leader of COMPRES Neutron initiative, 2002-7

#### PUBLICATION SUMMARY:

- Total manuscripts to date (not including abstracts): 159
- Books edited and book Chapters: 10
- Citations: > 8560 (Google scholar)
- h-index: 50 (Google scholar)
- i10-index 129 (Google scholar)

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#### PUBLICATIONS:

[1] Ross N.L. and Meagher E.P. (1984) A molecular orbital study of  $\text{H}_6\text{Si}_2\text{O}_7$  under simulated compression. *American Mineralogist* 69: 1145-1149.

[2] Ross N.L. and McMillan P. (1984) The Raman spectrum of  $\text{MgSiO}_3$  ilmenite. *American Mineralogist* 69: 719-721.

[3] Akaogi M., Ross N.L., McMillan P., and Navrotsky A. (1984) The  $\text{Mg}_2\text{SiO}_4$  Polymorphs (olivine, modified spinel and spinel) - thermodynamic properties from oxide melt solution calorimetry, phase relations, and models of lattice vibrations. *American Mineralogist* 69: 499-512.

[4] Ross N.L., Akaogi M., Navrotsky A., Susaki J., and McMillan P. (1986) Phase transitions among the  $\text{CaGeO}_3$  polymorphs (wollastonite, garnet, and perovskite structures): Studies by high-pressure synthesis, high-temperature calorimetry, and vibrational spectroscopy and calculation. *Journal of Geophysical Research* 91: 4685-4696.

[5] McKelvey M.J., O'Bannon G.W., Larson E.M., Marzke R.F., Eckert J., and Ross N.L. (1986) Synthesis, characterization and properties of the new ionic intercalation compound  $(\text{NH}_4^+)_{0.22}\text{TiS}_2^{0.22-}$ . *Materials Research Bulletin* 21: 1323-1333.

- [6] McMillan P.F. and Ross N.L. (1987) Heat capacity calculations for  $\text{Al}_2\text{O}_3$  corundum and  $\text{MgSiO}_3$  ilmenite. *Physics and Chemistry of Minerals* 14: 225-234.
- [7] Ross N.L. and Navrotsky A. (1987) The  $\text{Mg}_2\text{GeO}_4$  olivine - spinel phase transition. *Physics and Chemistry of Minerals* 14: 473-481.
- [8] Geisinger K.L., Ross N.L., McMillan P., and Navrotsky A. (1987)  $\text{K}_2\text{Si}_4\text{O}_9$ : Energetics and vibrational spectra of glass, sheet, and wadeite-type phases. *American Mineralogist* 72: 984-994.
- [9] Hazen R.M., Finger L.W., Angel R.J., Prewitt C.T., Ross N.L., Mao H.K., Hadidiacos C.G., Hor P.H., Meng R.L., and Chu C.W. (1987) Crystallographic description of the phases in the Y-Ba-Cu-O superconductor. *Physical Review B* 35:7238-7241.
- [10] Hazen R.M., Prewitt C.T., Angel R.J., Ross N.L., Finger L.W., Hadidiacos C.G., Veblen D.R., Heaney P.J., Hor P.H., Meng R.L., Sun Y.Y., Wang Y.Q., Xue Y.Y., Huang Z.J., Gao L., Bechtold J., and Chu C.W. (1988) Superconductivity in the very high  $T_c$  Bi-Ca-Sr-Cu-O system: Phase identification. *Physics Review Letters* 60:1174-1177.
- [11] Meng R.L., Hor P.H., Sun Y.Y., Huang Z.J., Gao L., Xue Y.Y., Wang Y.Q., Bechtold J., Chu C.W., Hazen R.M., Prewitt C.T., Angel R.J., Ross N.L., Finger L.W., and Hadidiacos C.G. (1988) The 120K superconducting phase in Bi-Ca-Sr-Cu-O. *Modern Physics Letters* 2:543-549.
- [12] Veblen D.R., Heaney P.J., Angel R.J., Finger L.W., Hazen R.M., Prewitt C.T., Ross N.L., Chu C.W., Hor P.H., and Meng R.L. (1988) Crystallography, chemistry, and structural disorder in the new high- $T_c$  Bi-Ca-Sr-Cu-O superconductor. *Nature* 332:334-337.
- [13] Hazen R.M., Finger L.W., Angel R.J., Prewitt C.T., Ross N.L., Hadidiacos C.G., Heaney P.J., Veblen D.R., Sheng V.V., Ali A.E., and Hermann A.M. (1988) 100K superconducting phases in the Tl-Ca-Ba-Cu-O system. *Physics Review Letters* 60:1657-1660.
- [14] Angel R.J., Gasparik T., Ross N.L., Finger L.W., Prewitt C.T., and Hazen R.M. (1988) A silica-rich sodium pyroxene phase with six-coordinated silicon. *Nature* 333:156-158.
- [15] Angel R.J., and Ross N.L. (1988) The I-1 to P-1 transition in anorthite-rich feldspars. *Annual Report of the Director of the Geophysical Laboratory, Carnegie Institution of Washington*, 91-95.
- [16] Hazen R.M., Finger L.W., Angel R.J., Ross N.L., Prewitt C.T., Mao H.K., Hadidiacos C.G., George D.J., Veblen D.R., and Heaney P.J. (1988) Superconductivity in new high- $T_c$  systems: Phase identification. *Annual Report of the Director of the Geophysical Laboratory, Carnegie Institution of Washington*, 99-106.
- [17] McMillan P. and Ross N.L. (1988) The Raman spectra of several orthorhombic calcium oxide perovskites. *Physics and Chemistry of Minerals* 16: 21-28.
- [18] Ross N.L. and Navrotsky A. (1988) Study of the  $\text{MgGeO}_3$  polymorphs (orthopyroxene, clinopyroxene, and ilmenite structures) by calorimetry, spectroscopy, and phase equilibria. *American Mineralogist* 73: 1355-1365.
- [19] Ross N.L. and Hazen R.M. (1989) Single crystal X-ray diffraction study of  $\text{MgSiO}_3$  perovskite from 77 to 400 K. *Physics and Chemistry of Minerals* 16: 415-420.

- [20] Ross N.L., Ko J., and Prewitt C.T. (1989) A new phase transition in  $\text{MnTiO}_3$  :  $\text{LiNbO}_3$  to perovskite structure. *Physics and Chemistry of Minerals* 16: 621-629.
- [21] Angel R.J., Redfern S.A.T., and Ross N.L. (1989) Spontaneous strain below the I-1 $\rightarrow$ P-1 transition in anorthite at pressure. *Physics and Chemistry of Minerals* 16:539-544.
- [22] Ross N.L., and Leinenweber K. (1990) Single crystal structure refinement of high-pressure  $\text{ZnGeO}_3$  ilmenite. *Zeitschrift fur Kristallographie* 191:93-104.
- [23] Prewitt C.T., Ko J., and Ross N.L. (1990) High pressure, single crystal studies of  $\text{MnTiO}_3$ . *High Pressure Research* 4:426-428.
- [24] Ross N.L., Shu J., Hazen R.M., and Gasparik T. (1990) High pressure crystal chemistry of stishovite. *American Mineralogist* 75:739-747.
- [25] Ross N.L., and Hazen R.M. (1990) High pressure crystal chemistry of  $\text{MgSiO}_3$  perovskite. *Physics and Chemistry of Minerals* 17: 228-237.
- [26] Angel R.J., Ross N.L., Finger L.W., and Hazen R.M. (1990)  $\text{Ba}_3\text{CaCuSi}_6\text{O}_{17}$ : A new  $\text{IB}\{1^1_\infty\}[\text{Si}_6\text{O}_{17}]$  chain silicate. *Acta Crystallographica C*46: 2028-2030.
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- [28] Ross N.L., Reynard B., and Guyot F. (1991) Crystal structure of high-pressure  $\text{MnGeO}_3$  ilmenite. *Acta Crystallographica C*47:1794-1796.
- [29] Ross N.L. and Reeder R.J. (1992) High pressure structural study of dolomite and ankerite. *American Mineralogist* 77:412-421.
- [30] Angel R.J., Ross N.L., and Wood I.G. (1992) Single crystal X-ray diffraction at high pressure. *Phase Transitions* 39: 13-32.
- [31] Angel R.J., Chopelas A., and Ross N.L. (1992) Stability of high-density clinoenstatite at upper-mantle pressures. *Nature* 358: 322-324.
- [32] Ross N.L., Reynard B., and Guyot F. (1992) High pressure structural study of  $\text{MnGeO}_3$  ilmenite. *Zeitschrift fur Kristallographie* 204: 43-55.
- [33] Ross N.L. (1992) Fourier transform Raman spectroscopy at high pressures: Preliminary results of sulphur to 56 Kbar. *Spectrochimica Acta* 49A: 681-684.
- [34] Hayward C., Angel R.J., Ross N.L. (1994) The structural redetermination and crystal chemistry of sinhalite,  $\text{MgAlBO}_4$ . *European Journal of Mineralogy* 6: 313-321.
- [35] Hayward C., Best S.R., Ross N.L., Clark R., and Witnall R. (1994) Polarised single crystal Raman spectroscopy of sinhalite,  $\text{MgAlBO}_4$ , *Spectrochimica Acta* 50A: 1287-1294.
- [36] Wentzcovitch R., Ross N.L., and Price, G.D. (1995) An ab-initio study of  $\text{MgSiO}_3$  and  $\text{CaSiO}_3$  perovskites at lower mantle pressures, *Physics of Earth and Planetary Interiors* 90: 101-112.

- [37] Ross N.L. (1996) Distortions in GdFeO<sub>3</sub>-type perovskites with pressure: A study of YAlO<sub>3</sub> to 5 GPa. *Phase Transitions* 58: 27-41.
- [38] Sowerby J.R. and Ross N.L. (1996) Electronic absorption spectra of clinoferrosilite to 5 GPa, *Physics and Chemistry of Minerals* 23: 297.
- [39] Angel R.J., Ross N.L., Seifert F. and Fliervoet T.F. (1996) Structural characterization of pentacoordinate silicon in a calcium silicate. *Nature* 384: 441-444.
- [40] Ross N.L. (1997) The equation of state and high-pressure behaviour of magnesite. *American Mineralogist* 82: 682-688.
- [41] Ross N.L. (1997) Optical absorption spectra of transition zone minerals and implications for radiative heat transport. *Physics and Chemistry of the Earth* 22:113-118.
- [42] Angel, R.J. and Ross, N.L. (1997) Equations of state of mantle minerals from high-pressure diffraction. *Physics and Chemistry of the Earth* 22: 119-123.
- [43] Chaplin T., Price G.D., and Ross N.L. (1998) Computer simulation of the infrared and Raman activity of pyrope garnet, and assignment of calculated modes to specific atomic motions. *American Mineralogist* 83: 841-847.
- [44] Ross N.L. (1998) High pressure study of ScAlO<sub>3</sub> perovskite. *Physics and Chemistry of Minerals* 25: 597-602.
- [45] Chakraborty S., Knoche R., Schulze H., Rubie D.C., Dobson D., Ross N.L., and Angel R.J. (1999) Enhancement of cation diffusion rates across the 410-km discontinuity in the Earth's Mantle. *Science* 283: 362-365.
- [46] Ross N.L. and Angel R.J. (1999) Compression of CaTiO<sub>3</sub> and CaGeO<sub>3</sub> perovskites. *American Mineralogist* 84: 277-281.
- [47] Ross N.L. and Reynard B. (1999) The effect of Fe<sup>2+</sup> on the P2<sub>1</sub>/c to C2/c transition in (Mg,Fe)SiO<sub>3</sub> clinopyroxenes. *European Journal of Mineralogy* 11: 585-589.
- [48] Crichton W.A., Ross N.L., and Gasparik T. (1999) Equations of state of Anhydrous B and Superhydrous-B. *Physics and Chemistry of Minerals* 26:570-575.
- [49] Ross N.L. and Sowerby J.R. (1999) High-pressure crystal field spectra of single crystal clinoferrosilite. *European Journal of Mineralogy* 11: 791-801.
- [50] Chaplin T.D., Ross N.L. and Reynard B. (2000) A high-temperature and high-pressure Raman spectroscopic study of CaGeO<sub>3</sub> garnet. *Physics and Chemistry of Minerals* 27: 213-219.
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- [52] Crichton W.A. and Ross N.L. (2000) Single crystal equation of state measurements on Mg-End-Members of the B-group Minerals. In: M.H. Manghni, W.J. Nellis and M.F. Nicol (Eds), AIRAPT-17



Proceedings - Science and Technology of High Pressure , Volume II, pp 587-590. Universities Press, Hyderabad, India.

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[54] Schoenitz M., Navrotsky A., and Ross N.L. (2001) Enthalpy of formation of  $\text{CaSi}_2\text{O}_5$ , a quenched high-pressure phase with pentacoordinate silicon. *Physics and Chemistry of Minerals* 28: 57-60.

[55] Boffa-Ballaran T., Carpenter M.A., and Ross N.L. (2001) Infrared-powder absorption spectroscopy of Ca-free  $\text{P2}_1/\text{c}$  clinopyroxenes. *Mineralogical Magazine* 65: 339-350.

[56] Angel R.J., Frost D.J., Ross N.L. and Hemley R.J. (2001) Stabilities and EoS of dense hydrous magnesium silicates. *Physics of Earth and Planetary Interiors* 127:181-196

[57] Ross N.L. and Crichton W.A. (2001) Compression of hydroxy-clinohumite ( $\text{Mg}_9\text{Si}_4\text{O}_{16}(\text{OH})_2$ ) and hydroxy-chondrodite ( $\text{Mg}_5\text{Si}_2\text{O}_8(\text{OH})_2$ ). *American Mineralogist* 86: 990-996.

[58] Le Godec, Y., Dove M.T., Francis D.J., Kohn S.C., Marshall W.G., Pawley A.R., Price G.D., Redfern S.A.T., Rhodes N., Ross N.L., Schofield P.F., Schoonveld E., Syfosse G., Tucker M.G., and Welch M.D. (2001) Neutron diffraction of simultaneous high temperatures and pressures, with measurement of temperature by neutron radiography. *Mineralogical Magazine* 65: 737-748.

[59] Kleppe, A., Jephcoat, A.P., and Ross, N.L. (2001) Raman spectroscopic studies of Phase E to 19 GPa. *American Mineralogist* 86: 1275-1281.

[60] Welch, M.D., Marshall W.G., Ross, N.L., and Knight, K.S. (2001) Hydrogen positions in leucophoenicite,  $\text{Mn}_7\text{Si}_3\text{O}_{12}(\text{OH})_2$ : A close relative of the hydrous B phases. *American Mineralogist* 87: 154-159.

[61] Crichton, W.A. and Ross, N.L. (2002) Equation of state of dense hydrous magnesium silicate phase A,  $\text{Mg}_7\text{Si}_2\text{O}_8(\text{OH})_6$ . *American Mineralogist* 87: 333-338.

[62] Ross, N.L., Angel, R.J. and Seifert, F. (2002) Compressibility of brownmillerite,  $\text{Ca}_2\text{Fe}_2\text{O}_5$ : Effect of Vacancies on the Elastic Properties of Perovskites. *Physics of Earth and Planetary Interiors* 129: 145-151.

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[65] McCammon C.A., and Ross N.L. (2003) Crystal chemistry of ferric iron in  $(\text{Mg,Fe,Al})\text{SiO}_3$  majorite with implications for the transition zone. *Physics and Chemistry of Minerals* 30:206-216.

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- [70] Gibbs, G.V., Cox, D.F., and Ross, N.L. (2004) A modeling of favorable H-docking sites and defects in the high pressure silica polymorph stishovite. *Physics and Chemistry of Minerals* 31: 232-239.
- [71] Zhao, J., Ross, N.L. and Angel, R.J. (2004) Tilting and distortion of  $\text{CaSnO}_3$  perovskite to 7 GPa determined from single-crystal X-ray diffraction. *Physics and Chemistry of Minerals* 31: 299-305.
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- [73] Zhao J., Ross, N.L. and Angel, R.J. (2004) A new view of the high-pressure behaviour of  $\text{GdFeO}_3$ -type perovskites. *Acta Crystallographica B* 60: 263-271.
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