

Publication List

M.C. Domeneghetti, V. Tazzoli, T. Boffa Ballaran, G.M. Molin (1996) Orthopyroxene from the Serra de Magé meteorite: a structure refinement procedure for a *Pbca* phase coexisting with a *C2/c* exolved phase. **American Mineralogist**, 81, 842–846.

T. Boffa Ballaran, M.A. Carpenter, M.C. Domeneghetti, V. Tazzoli (1997) Hard mode infrared spectroscopy of cation ordering and substitution in a chain silicate. **Phase transitions**, 63, 159–170.

T. Boffa Ballaran, M.A. Carpenter, M.C. Domeneghetti, V. Tazzoli (1998) Structural mechanisms of solid solution and cation ordering in augite-jadeite pyroxenes: I. A macroscopic perspective. **American Mineralogist**, 83, 419–433.

T. Boffa Ballaran, M.A. Carpenter, M.C. Domeneghetti, E.K.H. Salje, V. Tazzoli (1998) microscopic perspective. **American Mineralogist**, 83, 434–443.

M.A. Carpenter, T. Boffa Ballaran, A.J. Atkinson (1999) Microscopic strain, local structural heterogeneity and the energetics of silicate solid solutions. **Phase Transitions**, 69, 95–109.

T. Boffa Ballaran, M.A. Carpenter, C.A. Geiger, A.M. Koziol (1999) Local structural heterogeneity in garnet solid solutions. **Physics and Chemistry of Minerals**, 26, 554–569.

E.K.H. Salje, M.A. Carpenter, T. Malcherek, T. Boffa Ballaran (2000) Autocorrelation analysis of infrared spectra. **European Journal of Mineralogy**, 12, 503–519.

A.I. Becerro, M.A. Carpenter, T. Boffa Ballaran, F. Seifert (2000) Hard mode infrared spectroscopy of $\text{CaTiO}_3 - \text{CaFeO}_{2.5}$. **Phase transitions**, 71, 161–172.

T. Boffa Ballaran, R.J. Angel, M.A. Carpenter (2000) High-pressure transformation behaviour of the cummingtonite-grunerite solid solution. **European Journal of Mineralogy**, 12, 1195–1213.

T. Boffa Ballaran, M.A. Carpenter, M.C. Domeneghetti (2001) Phase transitions and thermodynamic mixing behaviour of the cummingtonite-grunerite solid solution. **Physics and Chemistry of Minerals**, 28, 87–101.

T. Boffa Ballaran, M.A. Carpenter, N.L. Ross (2001) Infrared powder – absorption spectroscopy of Ca-free *P2₁/c* clinopyroxenes. **Mineralogical Magazine**, 65, 339–350.

M.A. Carpenter, T. Boffa Ballaran (2001) The influence of elastic strain heterogeneities in silicate solid solutions. **EMU Notes in Mineralogy**, Vol. 3 “Solid solutions in silicate and oxide systems of geological importance”, C.A. Geiger ed., pp 155–178.

S.C. Tarantino, T. Boffa Ballaran, M.A. Carpenter, M.C. Domeneghetti, V. Tazzoli (2002) Mixing properties of the enstatite-ferrosilite solid solution: II. A microscopic perspective. **European Journal of Mineralogy**, 14, 537–547.

P. Comodi, M. Montagnoli, P.F. Zanazzi, T. Boffa Ballaran (2002) Isothermal compression of staurolite: a single – crystal study. **American Mineralogist**, 87, 1164–1171.

T. Boffa Ballaran, C. McCammon, M. A. Carpenter (2002) Order parameter behaviour at structural phase transitions from Mössbauer spectroscopy. **American Mineralogist**, 87, 1490–1493.

R. Stoyanova, E. Zhecheva, G. Bromiley, T. Boffa Ballaran, R. Alcantara, J.-I. Corredor, J.-L. Tirado (2002) High-pressure synthesis of Ga-substituted LiCoO₂ with layered crystal structure. **J. Materials Chemistry**, 12, 2501–2506.

T. Boffa Ballaran, M. A. Carpenter (2003) Line broadening and enthalpy: some empirical calibrations of solid solution behaviour from IR spectra. **Phase Transitions**, 76, 137–154.

T. Boffa Ballaran (2003) *Book review: Reviews in Mineralogy and Geochemistry*, Vol 41 (High-Temperature and High-Pressure Crystal Chemistry). **Geochimica et Cosmochimica Acta**, 67, 573.

T. Boffa Ballaran, R.J. Angel (2003) Equation of state and high-pressure phase transitions in lawsonite. **European Journal of Mineralogy**, 15, 241–246.

S. Rios, T. Boffa Ballaran (2003) Microstructure of radiation-damaged zircon under pressure. **Journal of Applied Crystallography**, 36, 1006–1012.

R. Stoyanova, E. Zhecheva, R. Alcantara, J.-L. Tirado, G. Bromiley, F. Bromiley, T. Boffa Ballaran (2003) Lithium/nickel mixing in the transition metal layers of lithium nickelate: high-pressure synthesis of layered Li[LixNi1-x]O₂ oxides as cathode materials for lithium-ion batteries. **Solid State Ionics**, 161, 197–204.

F. Nestola, M. Tribaudino, T. Boffa Ballaran (2004) High-pressure behavior, transformation and crystal structure of synthetic iron-free pigeonite. **American Mineralogist**, 89, 189–196.

G. D. Gatta, T. Boffa Ballaran, P. Comodi, P. Zanazzi (2004) Isothermal equation of state and compressional behavior of tetragonal edingtonite. **American Mineralogist**, 89, 633–639.

G. D. Gatta, T. Boffa Ballaran (2004) New insight into the crystal structure of orthorhombic edingtonite: evidence for a split Ba-site **Mineralogical Magazine**, 68, 167–175.

F. Nestola, T. Boffa Ballaran, P. Benna, M. Tribaudino, E. Bruno (2004) High-pressure phase transitions in Ca_{0.2}Sr_{0.8}Al₂Si₂O₈ feldspar. **American Mineralogist**, 89, 1474–1479.

G. D. Gatta, T. Boffa Ballaran, P. Comodi, P. F. Zanazzi (2004) Comparative compressibility and equation of state of orthorhombic and tetragonal edingtonite. **Physics and Chemistry of Minerals**, 31, 288–298.

U. Rodehorst, M. A. Carpenter, T. Boffa Ballaran, C.A. Geiger (2004) Local structural heterogeneity, mixing behaviour and saturation effects in the grossular-spessartine solid solution. **Physics and Chemistry of Minerals**, 31, 387–404.

T. Boffa Ballaran, M. A. Carpenter, M.C. Domeneghetti (2004) Local and macroscopic order parameter variations through the C2/m – P21/m phase transition in cummingtonite. **American Mineralogist**, 89, 1717–1727.

U.W. Bläß, F. Langenhorst, T. Boffa Ballaran, F. Seifert, D.J. Frost, C.A. McCammon (2004) A new oxygen deficient perovskite phase Ca(Fe_{0.4}Si_{0.6})O_{2.8} and phase relations along the join CaSiO₃ - CaFeO_{2.5} at transition zone conditions. **Physics and Chemistry of Minerals**, 31, 52–65.

R. Stoyanova, E. Zhecheva, R. Alcantara, J.-L. Tirado, G. Bromiley, F. Bromiley, T. Boffa Ballaran (2004) Layered solid solutions of LiNi_{1-x}CoxO₂ with alpha-LiGaO₂ obtained under high oxygen pressure. **J. Materials Chemistry**, 14, 366–373.

- S.D. Jacobsen, S. Demouchy, D.J. Frost, T. Boffa Ballaran, J. Kung (2005) A systematic study of OH in hydrous wadsleyite from polarized FTIR spectroscopy and single-crystal X-ray diffraction: Oxygen sites for hydrogen storage in Earth's interior. **American Mineralogist**, 90, 61–70.
- G. D. Gatta, P. Comodi, P. F. Zanazzi, T. Boffa Ballaran (2005) Anomalous elastic behaviour and high-pressure structural evolution of zeolite lewyne. **American Mineralogist**, 90, 645–652.
- G.D. Gatta, T. Boffa Ballaran, G. Iezzi (2005) High-pressure X-ray and Raman study of a ferrian magnesian spodumene. **Physics and Chemistry of Minerals**, 32, 132–139.
- G. Iezzi, T. Boffa Ballaran, C. McCammon, F. Langehorst (2005) The $\text{CaGeO}_3\text{-Ca}_3\text{Fe}_2\text{Ge}_3\text{O}_{12}$ garnet join: an experimental study. **Physics and Chemistry of Minerals**, 32, 197–207.
- F. Nestola, T. Boffa Ballaran, M. Tribaudino, H. Ohashi (2005) Compressional behaviour of $\text{CaNiSi}_2\text{O}_6$ clinopyroxene: bulk modulus systematic and cation type in clinopyroxenes. **Physics and Chemistry of Minerals**, 32, 222–227.
- L.F. Lundegaard, E. Makovicky, T. Boffa Ballaran, T. Balic-Zunic (2005) Crystal structure and cation lone electron pair activity of Bi_2S_3 between 0 and 10 GPa. **Physics and Chemistry of Minerals**, 32, 578–584.
- T. Boffa Ballaran, A. B. Woodland (2006) Local structure of ferric iron-bearing garnets deduced by IR-spectroscopy. **Chemical Geology** 225, 360–372.
- G. D. Gatta, F. Nestola, T. Boffa Ballaran (2006) Elastic behavior, phase transition, and pressure induced structural evolution of analcime. **American Mineralogist**, 91, 568–578.
- G. D. Gatta, F. Nestola, T. Boffa Ballaran (2006) Elastic behaviour and structural evolution of topaz at high pressure. **Physics and Chemistry of Minerals**, 33, 235–242.
- F. Nestola, T. Boffa Ballaran, C. Liebske, M. Bruno, M. Tribaudino (2006) High-pressure behaviour along the jadeite $\text{NaAlSi}_2\text{O}_6$ – aegirine $\text{NaFeSi}_2\text{O}_6$ solid solution up to 10 GPa. **Physics and Chemistry of Minerals**, 33, 417–425.
- F. Nestola, G. D. Gatta, T. Boffa Ballaran (2006) The effect of Ca substitution on the elastic and structural behavior of orthoenstatite. **American Mineralogist**, 91, 809–815.
- M. Pistorino, F. Nestola, T. Boffa Ballaran, M. C. Domeneghetti (2006) The effect of composition and cation ordering on the compressibility of columbites up to 7 GPa. **Physics and Chemistry of Minerals**, 33, 593–600.
- F. Bromiley, T. Boffa Ballaran, F. Langenhorst, F. Seifert (2007) Order and miscibility in the otavite – magnesite solid solution. **American Mineralogist**, 92, 829–836.
- F. Bromiley, T. Boffa Ballaran, M. Zhang (2007) An infrared investigation of the otavite – magnesite solid solution. **American Mineralogist**, 92, 837–845.
- F. Nestola, M. Longo, Catherine McCammon, T. Boffa Ballaran (2007) Crystal structural refinement of Na-bearing clinopyroxenes from mantle-derived eclogite xenoliths. **American Mineralogist**, 92, 1242–1245.
- P. Benna, F. Nestola, T. Boffa Ballaran, T. Balic-Zunic, L. F. Lundegaard, E. Bruno (2007) The high-pressure structural configurations of $\text{Ca}_{0.2}\text{Sr}_{0.8}\text{Al}_2\text{Si}_2\text{O}_8$ feldspar: The $I\bar{1}$ - $I2/c$ and $I2/c$ - $P2_1/c$ phase transitions. **American Mineralogist**, 92, 1190–1199.

F. Nestola, M. Tribaudino, T. Boffa Ballaran, C. Liebske, M. Bruno (2007) The crystal structure of pyroxenes along the jadeite-hedenbergite and jadeite-aegirine joins. **American Mineralogist**, 92, 1492–1501.

T. Boffa Ballaran, R. G. Trønnnes, D. J. Frost (2007) Equation of state of CaIrO_3 perovskite and post-perovskite phases. **American Mineralogist**, 92, 1760–1763.

McEnroe, S. A., P. Robinson, F. Langenhorst, C. Frandsen, M. P. Terry, T. Boffa Ballaran (2007) Magnetization of exsolution intergrowths of hematite and ilmenite: Mineral chemistry, phase relations, and magnetic properties of hemo-ilmenite ores with micron- to nanometer-scale lamellae from Allard Lake, Quebec. **J. Geophysical Research**, 112, B10103, doi:10.1029/2007JB004973

G. D. Gatta, I. Kantor, T. Boffa Ballaran, L. Dubrovinsky, C. McCammon (2007) Effect of non-hydrostatic conditions on the elastic behaviour of magnetite: An in-situ single-crystal X-ray diffraction study. **Physics and Chemistry of Minerals**, 34, 627–635.

F. Nestola, T. Boffa Ballaran, T. Balic-Zunic, F. Princivalle, L. Secco, A. Dal Negro (2007) Comparative compressibility and structural behavior of spinel MgAl_2O_4 at high pressures: The independency on the degree of cation order. **American Mineralogist**, 92, 1838–1843.

J. Liu, L. Dubrovinsky, T. Boffa Ballaran, W. Crichton (2007) Equation of state and thermal expansivity of LiF and NaF. **High Pressure Research**, 27, 483–489.

E. Pavarini, S. C. Tarantino, T. Boffa Ballaran, M. Zema, P. Ghigna, P. Carretta (2008) Effect of high pressure on competing exchange couplings in $\text{Li}_2\text{VOSiO}_4$. **Physical Review B**, 77, 014425.

S. Tarantino, M. Zema, T. Boffa Ballaran, P. Ghigna (2008) Room temperature equation of state of $\text{Li}_2\text{VOSiO}_4$ up to 8.5 GPa. **Physics and Chemistry of Minerals**, 35, 71–76.

M. Tribaudino, F. Nestola, T. Boffa Ballaran, C. Liebske, M. Bruno (2008) Thermal expansion along the $\text{NaAlSi}_2\text{O}_6 - \text{NaFe}^{3+}\text{Si}_2\text{O}_6$ and $\text{NaAlSi}_2\text{O}_6 - \text{CaFe}^{2+}\text{Si}_2\text{O}_6$ solid solutions. **Physics and Chemistry of Minerals**, 35, 241–248.

F. Nestola, T. Boffa Ballaran, T. Balic Zunic, L. Secco, A. Dal Negro (2008) The high-pressure behavior of an Al and Fe-rich natural orthopyroxene. **American Mineralogist**, 644–652.

F. Nestola, T. Boffa Ballaran, C. Liebske, R.M. Thompson, R.T. Downs (2008) The effect of the hedenbergitic substitution on the compressibility of jadeite. **American Mineralogist**, 93, 1005–1013.

F. Nestola, T. Boffa Ballaran, H. Ohashi (2008) The high-pressure $C2/c$ - $P2_1/c$ phase transition along the $\text{LiAlSi}_2\text{O}_6$ - $\text{LiGaSi}_2\text{O}_6$ solid solution. **Physics and Chemistry of Minerals**, 35, 477–484.

B.P. Burton, P. Robinson, S.A. McEnroe, K. Fabian, T. Boffa Ballaran (2008) A low-temperature phase diagram for ilmenite-rich compositions in the system $\text{Fe}_2\text{O}_3 - \text{FeTiO}_3$. **American Mineralogist**, 93, 1260–1272.

G.D. Gatta, N. Rotiroti, T. Boffa Ballaran, A. Pavese (2008) Leucite at high-pressure: elastic behaviour, phase stability and petrological implications. **American Mineralogist**, 93, 1588–1596.

A. Kurnosov, I. Kantor, T. Boffa Ballaran, S. Lindhardt, L. Dubrovinsky, A. Kuznetsov, B.H. Zehnder (2008) A novel gas-loading system for mechanically closing of various types of diamond anvil cells. **Review of Scientific Instruments**, 79, 045110.

R.J. Angel, G.D. Gatta, T. Boffa Ballaran, M.A. Carpenter (2008) The mechanism of coupling in the modulated structure of nepheline. **Canadian Mineralogist**, 46, 1465–1476.

A. Saikia, T. Boffa Ballaran, D.J. Frost (2009) The effect of Fe and Al substitution on the compressibility of MgSiO₃ perovskite determined through single-crystal X-ray diffraction. **Physics of the Earth and Planetary Interiors**, 173, 153–161.

A.B. Woodland, M. Bauer, T. Boffa Ballaran, Margaret Hanrahan (2009) Crystal chemistry of Fe²⁺₃Cr₂Si₃O₁₂ - Fe²⁺₃Fe³⁺₂Si₃O₁₂ garnet solid solutions and related spinels. **American Mineralogist**, 94, 359–366.

G.D. Gatta, N. Rotiroti, T. Boffa Ballaran, C. Sanchez Valle, A. Pavese (2009): Elastic behavior and phase-stability of pollucite, a potential host for nuclear waste. **American Mineralogist**, 94, 1137–1143.

T. Boffa Ballaran, F. Nestola, M. Tribaudino, H. Ohashi (2009): Bulk modulus variation along the diopside-kosmochlor solid solution. **European Journal of Mineralogy**, 21, 591–597.

T. Boffa Ballaran, J. Liu, L. Dubrovinsky, R. Caracas, W. Crichton (2009): High-pressure ferroelastic phase transition in aluminosilicate hollandite. **Physical Review B**, 80, 214104.

M. Alvaro, F. Nestola, T. Boffa Ballaran, F. Camara, M. C. Domeneghetti, V. Tazzoli (2010): High-pressure phase transition of a natural pigeonite. **American Mineralogist**, 95, 300-311.

P. Gavrilenko, T. Boffa Ballaran, H. Keppler (2010). The effect of Al and water on the compressibility of diopside. **American Mineralogist**, 95, 608-616.

F. Nestola, T. Boffa Ballaran, R. Angel, J. Zhao, H. Ohashi (2010): In situ high-pressure behaviour of Ca-bearing silicates: the effect of divalent and trivalent 3d-transition elements. **American Mineralogist**, 95, 832-838.

G. Ganskow, T. Boffa Ballaran, F. Langenhorst (2010). Effect of iron on the compressibility of hydrous ringwoodite. **American Mineralogist**, 95, 747-753.

T. Boffa Ballaran, D. J. Frost, N. Miyajima, F. Heidelbach (2010). The structure of a super-aluminous version of the dense hydrous magnesium silicate phase D. **American Mineralogist**, 95, 1113-1116.

P. Comodi, T. Boffa Ballaran, P. F. Zanazzi, C. Capalbo, A. Zanetti, S. Nazzareni (2010). The effect of oxo-component on the high-pressure behavior of amphiboles. **American Mineralogist**, 95, 1042-1051.

R. Caracas, T. Boffa Ballaran (2010) Elasticity of (K,Na)AlSi₃O₈ hollandite from lattice dynamics calculations. **Physics of the earth and Planetary Interiors**, 181, 21-26.

S. Tarantino, M. Zema, T. Boffa Ballaran (2010) Crystal structure of columbite at high pressure. **Physics and Chemistry of Minerals**, 37, 769-778.

L. Dubrovinsky, T. Boffa Ballaran, K. Glazyrin, A. Kurnosov, D. Frost, M. Merlini, M. Hanfland, V.B. Prakapenka, P. Schouwink, T. Pippinger, N. Dubrovinskaia (2010) Single-crystal X-ray

diffraction at megabar pressures and temperatures of thousands of degrees. **High-pressure Research**, 30, 620-633.

S. D. Jacobsen, Z. Liu, T. Boffa Ballaran, E. F. Littlefield, L. Ehm, R. J. Hemley (2010) Effect of H₂O on upper mantle phase transitions in MgSiO₃: is the depth of the seismic X-discontinuity an indicator of mantle water content? **Physics of the Earth and Planetary Interiors**, 183, 234-244.

F. Nestola, T. Boffa Ballaran, M. Koch-Müller, T. Balic_Zuma, M. Taran, L. Olsen, F. Princivalle, L. Secco, L. Lundegaard (2011): New accurate compression data for γ -Fe₂SiO₄. **Physics of the Earth and Planetary Interiors**, 183, 421-425.

L. Chelazzi, T. Boffa Ballaran, F. Nestola, L. Bindi, P. Bonazzi (2011) High-pressure behavior of the synthetic Ca₂Sb₂O₇ weberite-type compound. **Solid State Sciences**, 13, 1092-1095.

F. Pandolfo, T. Boffa Ballaran, F. Nestola, M. Koch Müller, M. Mrosko, E. Bruno (2011). High-pressure *I2/c*-*P2₁/c* phase transformation in SrAl₂Si₂O₈ feldspar. **American Mineralogist**, 96, 1182-1185.

D. Trots, A. Kurnosov, L. Vasylechko, M. Berkowski, T. Boffa Ballaran, D.J. Frost (2011). Elasticity and equation of state of Li₂B₄O₇. **Physics and Chemistry of Minerals**, 38, 561-567.

K. Fabian, N. Miyajima, P. Robinson, S.A. McEnroe, T. Boffa Ballaran, B.P. Burton (2011). Chemical and magnetic properties of rapidly cooled metastable ferri-ilmenite solid solutions: implications for magnetic self-reversal and exchange bias-I. Fe-Ti order transition in quenched synthetic ilmenite 61. **Geophysical Journal International**, 186, 997-1014.

T. Boffa Ballaran, A. Kurnosov, K. Glazyrin, D.J. Frost, M. Merlini, M. Hanfland, R. Caracas (2012). Effect of chemistry on the compressibility of silicate perovskite in the lower mantle. **Earth and Planetary Science Letters**, 333-334, 181-190.

J. N. Bull, W. C. Tennant, T. Boffa Ballaran, F. Nestola, C. A. McCammon (2012). Anisotropic mean-squared-displacement tensor in cubic almandine garnet: a single crystal ⁵⁷Fe Mössbauer study. **Physics and Chemistry of Minerals**, 39, 561-575.

G. O. Lepore, T. Boffa Ballaran, F. Nestola, L. Bindi, D. Pasqual, P. Bonazzi (2012). Compressibility of β -As₄S₄: an in situ high-pressure single-crystal X-ray study. **Mineralogical Magazine**, 76, 963-973.

D. M. Trots, A. Kurnosov, T. Boffa Ballaran, D. J. Frost (2012). High-temperature structural behaviours of anhydrous wadsleyite and forsterite. **American Mineralogist**, 97, 1582-1590.

I. Kuppenko, L. Dubrovinsky, N. Dubrovinskaia, C. McCammon, K. Glazyrin, E. Bykova, T. Boffa Ballaran, R. Sinmyo, A. I. Chumakov, V. Potapkin, A. Kantor, R. Rüffer, M. Hanfland, W. Crichton, M. Merlini (2012). Portable double-sided laser-heating system for Mössbauer spectroscopy and X-ray diffraction experiments at synchrotron facilities with diamond anvil cells. **Review of Scientific Instruments**, 83, 124501.

W. Xu, E. Greenberg, G.K. Rozenberg, M.P. Pasternak, E. Bykova, T. Boffa Ballaran, L. Dubrovinsky, V. Prakapenka, M. Hanfland, O.Y. Vekilova, S.I. Simak, I.A. Abrikosov (2013) Pressure-induced hydrogen bond symmetrization in iron oxyhydroxide. **Physical Review Letters**, 111, 175501.

L. Chelazzi, T. Boffa Ballaran, G.O. Lepore, L. Bindi, P. Bonazzi (2013) High-pressure behaviour of synthetic $\text{Mn}^{2+}_2\text{Sb}^{5+}_2\text{O}_7$: an *in situ* single-crystal X-ray study. **Solid State Science**, 21, 85-89.

T. Boffa Ballaran (2013) Diffraction at extreme conditions: a window into the Earth's interior. **Rendiconti dei Lincei-Scienze Fisiche e Naturali**, 24, S47-S54.

H.J. Reichmann, S.D. Jacobsen, T. Boffa Ballaran (2013) Elasticity of franklinite and trends for transition-metal oxide spinels. **American Mineralogist**, 98, 601-608.

T. Boffa Ballaran, A. Kurnosov, D. Trots (2013) Single-crystal diffraction at extreme conditions: a review. **High Pressure Research**, 33, 453-465.

S. Demouchy, A. Tommasi, T. Boffa Ballaran, P. Cordier (2013). Low strength of Earth's uppermost mantle inferred from tri-axial deformation experiments on dry olivine crystals. **Physics of the Earth and Planetary Interiors**, 220, 37-49.

W. Xu, E. Greenberg, G. Kh. Rozenberg, M. P. Pasternak; E. Bykova, T. Boffa Ballaran, L. Dubrovinsky, V. Prakapenka, M. Hanfland, O. Y. Vekilova, S. I. Simak, I. A. Abrikosov (2013) Pressure-induced hydrogen bond symmetrisation in iron oxyhydroxide. **Physical Review Letters**, 111, 175501.

D. M. Trots, A. Kurnosov, T. Boffa Ballaran, S. Tkachev, K. Zhuravlev, V. Prakapenka, M. Berkowski, D. J. Frost (2013) The Sm:YAG primary fluorescence pressure scale. **Journal of Geophysical Research – Solid Earth**, 118, 5805-5813.

A. B. Woodland, K. Schollenbruch, M. Koch, T. Boffa Ballaran, R. J. Angel, D. J. Frost (2013) Fe_4O_5 and its solid solutions in several simple systems. **Contributions to Mineralogy and Petrology**, 166, 1677-1686.

A. Černok, T. Boffa Ballaran, R. Caracas, N. Miyajima, E. Bykova, V. Prakapenka, H.-P. Liermann, L. Dubrovinsky (2014) Pressure-induced phase transitions in coesite. **American Mineralogist**, 99, 755-763.

K. Glazyrin, T. Boffa Ballaran, D.J. Frost, C. McCammon, A. Kantor, M. Merlini, M. Hanfland, L. Dubrovinsky (2014) Magnesium silicate perovskite and effect of iron oxidation state on its bulk sound velocity at the conditions of the lower mantle. **Earth and Planetary Science Letters**, 393, 182-186.

P. Robinson, F. Langenhorst, S.A. McEnroe, K. Fabian, T. Boffa Ballaran (2014) Ferroan geikielite and coupled spinel-rutile exsolution from titanohematite: Interface characterization and magnetic properties. **American Mineralogist**, 99, 1694-1712.

M.G. Pamato, A. Kurnosov, T. Boffa Ballaran, D.M. Trots, R. Caracas, D.J. Frost (2014) Hexagonal $\text{Na}_{0.41}[\text{Na}_{0.125}\text{Mg}_{0.79}\text{Al}_{0.085}]_2[\text{Al}_{0.79}\text{Si}_{0.21}]_6\text{O}_{12}$ (NAL phase): Crystal structure refinement and elasticity. **American Mineralogist**, 99, 1562-1569.

M. Giannini, T. Boffa Ballaran, F. Langenhorst (2014) Crystal chemistry of synthetic Ti-Mg bearing hibonite: A single-crystal X-ray study. **American Mineralogist**, 99, 2060-2067.