

Chemical composition of minerals in granulite xenoliths from the Taфраoute Maar

Table S1. Representative analyses of sillimanite.

Table S2. Representative analyses of garnet computed on the basis of 12 oxygens from Taфраoute granulites samples: G2, G3, G4, TAF500 and TAF501. recalculated $\text{Fe}^{3+} = 2 - (\text{Al}^{\text{IV}} + \text{Cr} + \text{Ti})$, σ = Standard Deviation.

$$X_{\text{alm}} = \text{Fe} / (\text{Fe} + \text{Mn} + \text{Mg} + \text{Ca})$$

$$X_{\text{prp}} = \text{Mg} / (\text{Fe} + \text{Mn} + \text{Mg} + \text{Ca})$$

$$X_{\text{sps}} = \text{Mn} / (\text{Fe} + \text{Mn} + \text{Mg} + \text{Ca})$$

$$X_{\text{grs}} = \text{Ca} / (\text{Fe} + \text{Mn} + \text{Mg} + \text{Ca})$$

Table S3. Representative analyses of osumilite (based on 30 oxygens) of G3 sample from Taфраoute granulite.

Table S4. Representative analyses of orthopyroxene (based on 6 oxygens) of Taфраoute granulites: samples G2, G3, G4, TAF500 and TAF501. $\text{Fe}^{3+ \text{ rec}}$ recalculated according to Schumacher's (1991) method. $\text{Fe}^{3+}/\text{Fe}^{2+} = 100 * (\text{Fe}^{3+}/\text{Fe}^{2+})$. $X_{\text{Fe}} \text{ Total } (X_{\text{FeT}}) = \text{Fe}^{\text{T}}/\text{Fe}^{\text{T}} + \text{Mg}$, $(X_{\text{Fe}}^{2+ \text{ rec}}) = \text{Fe}^{2+ \text{ rec}}/\text{Fe}^{2+ \text{ rec}} + \text{Mg}$.

Table S5. Representative analyses of spinel (based on 4 oxygens) of Taфраoute granulites: samples G2, G4, TAF500 and TAF501. $\text{Fe}^{3+ \text{ rec}}$ recalculated using Droops' (1987) method. $\text{Fe}^{3+}/\text{Fe}^{2+} = 100 * (\text{Fe}^{3+}/\text{Fe}^{2+})$. $X_{\text{Fe}} \text{ Total } (X_{\text{FeT}}) = \text{Fe}^{\text{T}}/\text{Fe}^{\text{T}} + \text{Mg}$, $(X_{\text{Fe}}^{2+ \text{ rec}}) = \text{Fe}^{2+ \text{ rec}}/(\text{Fe}^{2+ \text{ rec}} + \text{Mg})$. E G: Euhedral in glass, N S : near sillimanite, N G : near garnet, A S : around sillimanite.

Table S6. Representative analyses of rutile from Taфраoute granulite samples G3 and TAF501

Table S7. Representative analyses of Ti-magnetite (based on 4 oxygens) and ilmenite (based on 3 oxygens) from Taфраoute granulites: samples G2, G3, G4, TAF500 and TAF501. Fe_2O_3 wt% was recalculated using Carmichael's (1967) method, the atomic proportions of ulvöspinel (Usp) and ilmenite (Il) were calculated applying the method developed by Lindsley and Spencer (1982).

Table S8. Averaged analyses of glass from G2, G3, G4, TAF500 and TAF501 Taфраoute granulites.

Table S9. Representative analyses of K-feldspars and plagioclases of Taфраoute granulites calculated on the basis of 8 oxygens. K-feldspars contains between 0.2 and 0.8 wt% BaO. K-feldspar porphyroclasts (kfp), small grain of plagioclase around K-feldspar porphyroclasts (sak), (c) = core, (r) = rim.

Table S10. Representative analyses of corundum of the Taфраoute granulite TAF500 and of one free euhedral megacryst.

