

# *A new location with micro-diamond-bearing metamorphic rocks south of Sidironero (SW Rhodopes, Greece)*

Silke Schmidt<sup>1,2</sup>, Thorsten J. Nagel<sup>1</sup>, Nikolaus Froitzheim<sup>1</sup>

<sup>1</sup> Steinmann-Institut, Universität Bonn, Poppelsdorfer Schloss, 53115 Bonn, Germany.

<sup>2</sup> Present address: Institut für Geologie und Paläontologie, Universität Münster, Corrensstraße 24, 48149 Münster, Germany (silkeschmidt@uni-muenster.de)

We present a fourth location with micro-diamond-bearing, ultrahigh-pressure (UHP) metamorphic rocks in the Rhodope Metamorphic Province near the village Sidironero, about 70 kilometers west of the nearest known UHP location at Xanthi (Fig. 1). HP and UHP metamorphic conditions are preserved in an intensely strained mélangé zone which is sandwiched between upper greenschist to lower amphibolite facies rocks in the footwall (Pangaion-Pirin Complex) and amphibolite facies rocks in the hanging wall (Rhodope Terrane). The mélangé zone consists of various paragneisses, orthogneisses and metamafics. A strong overprint at high amphibolite facies conditions associated with migmatitisation in the orthogneisses and subsequent intense mylonitisation at lower amphibolite facies conditions almost obliterates peak-pressure assemblages. Relicts of HP conditions are preserved in mafic boudins and in garnet-kyanite-mica schists. Garnet in these schists displays inclusions of micro-diamonds and previously described exsolutions of rutile and quartz (Mposkos & Kostopoulos, 2001; Perraki et al., 2006; Turpaud & Reischmann, in press). The lithological and structural appearance of the mélangé zone resembles the exposure of UHP metamorphic rocks further east at Xanthi, while the locations at Kimi and Sidiro (Fig. 1) may occupy a higher structural level.

## References:

Mposkos E.D. & Kostopoulos D.K. (2001). *Earth Planet Sci Lett*, 192, 497-506.

Perraki M., Proyer A., Mposkos E., Kaindl R., Hoinkes G. (2006). *Earth Planet Sci Lett*, 241, 672-685.

Turpaud P. & Reischmann T. (in press). *Int J Earth Sci*, 25 pp.

Figure 1: Tectonic sketch map of the Rhodope Metamorphic Province. The westernmost diamond occurrence is reported here, the remaining ones are described by Mposkos & Kostopoulos (2001) and Perraki et al. (2006).

