

## **METAMORPHIC EVOLUTION OF THE SEVE NAPPE COMPLEX IN THE SNASAHÖGARNA AREA, SWEDISH CALEDONIDES**

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The Middle Seve Nappe in the Snasahögarna mountains, western Jämtland, Sweden, is composed of high grade metamorphic rocks emplaced in far-travelled nappes. The investigation of these paragneisses, derived from the Baltica margin, can contribute information about the subduction and exhumation processes, which controlled the formation of the Seve Nappe Complex (SNC) in the Scandinavian Caledonides.

Recent studies in other parts of the orogen have shown that the rocks of the SNC likely have experienced pressures higher than what was previously described (Janák et al. 2012, Klonowska et al. in press). These latest PT studies along with geochronological dates available suggest that the collision between Baltica and Laurentia has commenced c. 30 m.y. earlier (at ca. 450 Ma) than generally accepted.

Samples of kyanite- and garnet-bearing meta-sediments were collected along a profile at Tväraklumparna (Snasahögarna area) and investigated in thin sections using light microscopy followed by BSE imaging, WDS analysis and Raman spectroscopy.

Preliminary results show that dominant garnet reaches up to 7 mol. % of Grs content. The garnet commonly contains inclusions of quartz surrounded by radial cracks and grains of polycrystalline quartz. More rare are inclusions of kyanite and white mica with a Si-contents reaching 3.34 a.p.f.u. Detailed studies of garnet revealed dense areas of micrometer size inclusions exhibiting negative crystal shape present in the core regions. Raman studies suggest these inclusions are at least partly formed by microdiamond.

Textural evidence of peak metamorphic conditions reaching the stability field of coesite together with microdiamonds preserved in garnet cores confirms that the Seve Nappe crustal rocks of the Snasahögarna area has undergone ultrahigh pressure metamorphism.

## REFERENCES

- Janák M., van Roermund H., Majka J. & Gee D., 2012. UHP metamorphism recorded by kyanite-bearing eclogite in the Seve Nappe Complex of northern Jämtland, Swedish Caledonides. *Gondwana Research*, [on-line:] <http://dx.doi.org/10.1016/j.gr.2012.06.012>.
- Klonowska I., Majka J., Janák M., Gee D.G. & Ladenberger A., 2013. Pressure-temperature evolution of a leucogranulite from Areskutan: implications for (U)HP metamorphism of the Seve Nappe Complex, west-central Jämtland, Swedish Caledonides. *Geological Society (London) Special Publication*.