First Refinement of the Sinoite Structure of a Natural Crystal from the Neuschwanstein (EL6) Meteorite

Addi Bischoff[a], Thorsten Grund[a], Thomas Jording[a], Birgit Heying[b], Rolf-Dieter Hoffmann[b], Ute C. Rodewald[b], and Rainer Pöttgen[b]

[a] Institut für Planetologie and ICEM (Interdisciplinary Center for Electron Microscopy and Microanalysis), Westfälische Wilhelms-Universität Münster, Wilhelm-Klemm-Straße 10, D-48149 Münster, Germany

[b] Institut für Anorganische und Analytische Chemie, Westfälische Wilhelms-Universität Münster, Corrensstraße 36, D-48149 Münster, Germany

Reprint requests to A. Bischoff or R. Pöttgen. E-mail: bischoa@uni-muenster.de, pottgen@uni-muenster.de

Z. Naturforsch. **60b,** 1231 – 1234 (2005); received August 25, 2005

Dedicated to Professor Gerhard Thiele on the occasion of his 70th birthday

A well-shaped sinoite crystal was milled out of a polished thin section of the Neuschwanstein (EL6) chondrite. The structure was refined on the basis of X-ray single crystal data: $Cmc2_1$, $a = 885.66(18)$, $b = 549.61(11)$, $c = 484.23(10)$ pm, $R1 = 0.0282$, 491 F^2 values, 26 variable parameters. The structure consists of a complex three-dimensional network of corner-sharing SiN_3O tetrahedra (Si–O 161.9, Si–N 171.9–172.8 pm). The crystal chemical peculiarities of Si_2N_2O are briefly discussed.

Key words: Sinoite, Enstatite Chondrites, X-Ray Diffraction