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Stubenberg Meteorite Fall 2016: Raman Spectroscopy and Carbon Phases

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The Stubenberg (LL6) meteorite fall was registered on march 6th 2016 in SE Bavaria, see [1] for details. We have performed systematic analyses on the phase composition, shock degree (Raman Spectroscopy) and magnetic signature (MagSus). Our contribution is aimed on the carbon phases which is part of a systematic investigation on C-phases of a larger set of stony meteorites [2]. Only a very few systematic studies on the C-phase mineralogy of stony meteorites are known, mainly focusing on graphitic components or diamond polymorphs [2 and refs]. Our recent investigations on Stubenberg (LL6), Machtenstein (H5), Braunschweig (L6), Eichstätt (H5), and for comparison on a number of non-ureilitic lithologies of Almahata Sitta (Urei) as well as on Saricicek (How) confirmed the presence of a multitude of carbon phases. All our Raman Spectroscopy experiments are exclusively performed on “broken” fragments to definitely exclude any effects related to cutting, preparation or coating.

[1] Bischoff A., and The Stubenberg Meteorite Consortium, 2017. Meteor. Planet. Science, 1-21, doi: 10.1111/maps.12883. [2] Hoffmann et al., 2017. Antarct. Meteor. Conf., (Polar Science Conf.), NIPR / Tokyo.

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