

The Ensisheim Meteorite (Fall 1492) Revisited

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Introduction

The Ensisheim meteorite, fall November 7th 1492, is the oldest recorded and witnessed meteorite fall in Europe [1-6]. Ensisheim was classified as LL6 ordinary chondrite, its 53,8 kg main mass is kept in the museum “Palais de la Regence” at Ensisheim, France. Our investigations on the Ensisheim meteorite are part of a series of similar projects on historical meteorites of the Mineralogical State Collection Munich (MSM-SNSB).

Samples and methods

Systematic investigations on the phase composition and mineralogy of Ensisheim have been conducted by Digital Microscopy and Micro Raman Spectroscopy; element analyses on the chemical composition of the main phases and further studies on the magnetic signature will follow. Details on the methods are given elsewhere [7].

Large sets of fragments of various sizes and PTS (polished thin sections) of the Ensisheim meteorite could be used within our project.

Results

Ensisheim shows the typical features of a LL6 chondrite with a very low content Fe-Ni metal, and a number of chondrule relicts can be recognized (olivine, OPX rich) (figure 1). Ensisheim is highly brecciated, revealing different clast types. The presence of melt veins and pockets confirms the S3 shock level, no indications of terrestrial alterations could be found (W0). The phase composition of Ensisheim as obtained by Digital Microscopy and Micro Raman Spectroscopy is summarized in table 1:



- Olivine (dominating phase, near forsterite)
- Plagioclase
- Fe – sulphides, mainly troilite
- OPX (orthopyroxene)
- Glass (melt veins, pockets)
- Phosphates (merrillite)
- Fe – oxides (magnetite / chromite)
- Ringwoodite
- Fe-Ni metal

Table 1

Olivine and OPX (orthopyroxene) were found to be the main phases of the relict chondrules.

More details will be presented on our iposter contribution.

References

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