E ISCHGL METEORITE: FINDING CIRCUMSTANCES, MINERALOGY AND BULK CHEMISTRY

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gl is the seventh meteorite named after an Austrian finding site. It was found in June 1976 mountain road about 2 km NW of the Tyrolean town Ischgl at an altitude of ca. 2000 m e sea level. According to the finder, a single fist-sized black stone had been fallen out of now of an avalanche. He took the unusual stone to his home and kept it for more than y years. In 2007, the finder brought his find to the University of Innsbruck, where its oritic nature was confirmed. In 2011, the stone was acquired by the Natural History eum, Vienna, and subsequently officially classified as a LL6 chondrite ANDSTÄTTER et al., 2013). The meteorite was investigated by a variety of techniques ıding optical microscopy, analytical SEM, SEM-CL, EMPA, and INAA. Macro- ically, the meteorite, weighing 710 g, is to a large extent fusion-crusted and exhibits well- loped regmaglypts. Its interior is a uniform light-grey colored rock without any distinct s and shows only minor signs of terrestrial weathering. Microscopically, the meteorite is nomict breccia consisting predominantly of coarse-grained mm to cm-sized clasts set in a -grained breccia matrix. Clasts and matrix are strongly recrystallized and only a few relic ıdrules were encountered. Olivine, orthopyroxene and plagioclase are the main silicates. r minerals include clinopyroxene, chlorapatite and whitlockite. The opaque phases ist predominately of nickel-iron, troilite, and chromite. In addition, ilmenite and native er occur as rare constituents. Compositionally, all mineral phases are consistent with the ification of the Ischgl meteorite as LL6 chondrite. Olivines and orthopyroxenes are librated with average compositions of $Fa_{28.9}$ and $Fs_{23.8}Wo_{2.1}$ respectively. Plagioclase par ($Ab_{85}An_{10}Or_5$) is oligoclase. The compositions of the Ca-phosphates are in the range rted for equilibrated ordinary chondrites (JOLLIFF et al., 2006). Averaged compositions ıe nickel-iron metal phases kamacite (4.42 wt. % Ni, 3.37 wt. % Co) and taenite (38.84 % Ni, 1.10 wt. % Co) agree well with the compositions reported for these phases in LL ıdrites (AFIATTALAB & WASSON, 1979). Bulk chemical compositions for 34 major trace elements were performed for two samples of the Ischgl meteorite. A comparison of e INAA data with the mean bulk concentrations reported by KALLEMEYN et al. (1989) LL6 chondrites shows an excellent match.

TTALAB, F., WASSON, J.T. (1980): Geochim. Cosmochim. Acta, 44, 431-446.
NDSTÄTTER, F., KONZETT, J., KOEBERL, C., FERRIÈRE, L. (2013): Ann. Naturhist. Museum Wien, A, 115, 5-18.
IFF, B., HUGHES, J.M., FREEMAN, J.J., ZEIGLER, R.A. (2006): Am. Mineral., 91, 1583-1595.
LEMEYN, G.W., RUBIN, A.E., WANG, D., WASSON, J.T. (1989): Geochim. Cosmochim. Acta, 53, -2767.