CLASSIFICATION OF A NEW CHONDRITE FROM LAGO DI VALSCURA, ITALY. G. Pratesi[1] and V. Moggi-Cecchi[2], [1]Dipartimento di Scienze della Terra, Università di Firenze, Via La Pira, 4, I-50121, Florence, Italy, e-mail: gpratesi@geo.unifi.it - [2]Museo di Scienze Planetarie, Provincia di Prato, Via Marengo 49/a, I-59100 Prato, Italy, e-mail: v.moggi@igt.it .

Introduction: In August 1995 a mountain excursionist, Mr. Francesco Felice, was walking near a moraine along the shore of the upper Lago di Valscura (coordinates: 44°11'30" N – 7°12'01" E), in the Argentera mountain group, near the Terme di Valdieri municipality (Cuneo). He saw a small stone and picked it up because it was the only black stone among a lot of other white stones. The man wrote to Mr. Matteo Chinellato, an Italian collector, and sent him the main mass. Mr. Chinellato realized that it was a meteorite and purchased it.

Description: The original total mass of the meteorite was 200g. Mr. Chinellato owns the main mass weighing 77.4g. It has a pyramidal shape and shows a fusion crust covering 90% of the specimen, with traces of shock fractures. Its dimensions are 6 x 5.2 x 4.5 cm. The main mass has been cut on one side to provide a sample for analysis. On this side its chondritic texture can be easily seen, with metal grains scattered in a gray-brown silicate matrix.

Electron microprobe analyses indicate an iron content of olivine and pyroxene consistent with a H-chondrite (Fa = 18.95 mol %, Fs = 16.43 mol %, Wo = 1.43 mol %) [1]. Olivine and pyroxene compositions are homogeneous either inside and outside chondrules, pointing to a rather equilibrated petrologic type.

Metal grains have a kamacitic composition and sulphide grains are composed mostly of troilite. Some relict chondrules show a barred texture, with an intergrowth of olivine crystals and of feldspar. Minor crystals of hydroxylapatite and of chlorapatite have been found inside chondrules (fig. 1).

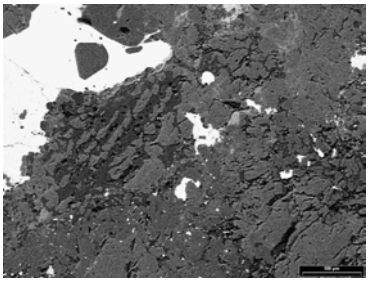

FIG. 1: SEM – BSE image of a relict barred chondrule consisting of feldspar (black) and olivine crystals (dark grey); metal grains (white) show narrow rims of oxides (light grey); in the center a small grain of chlorapatite (light gray).

Textural features (presence of poorly delineated chondrules, absence of glass inside the chondrules) confirm analytical data, suggesting a high petrologic type. Moderate oxidation (20-60% of the metal being affected) indicates a rather low weathering grade (W2) [2]; undulose extinction and microfractures of olivine crystals point to a rather high (S4) shock stage [3].

Conclusions: Based on mineralogical and chemical data the meteorite is classified as a H5 chondrite. We propose to name it "Lago Valscura", after the location in which it was found. Further investigation will clarify the exact date and time of the find.

This meteorite constitutes the 32nd meteorite found in Italy, the 22nd chondrite and the 5th of H5 type.

Type specimen weighing 22.1g is deposited in the Museo di Scienze Planetarie della Provincia di Prato (MSP), Prato, Italy.

References: [1] Rubin A. E. (1990) *GCA, 54,* 1217–1232. [2] Wlotzka F. (1993) *Meteorit. Planet. Sci., 28,* A460. [3] Stöffler D. et al. (1991) GCA *55,* 3845–3867.