

ANTARCTIC METEORITES RECOVERED FROM THIEL MOUNTAINS, WEST ANTARCTICA BY THE FIRST KOREA EXPEDITION FOR ANTARCTIC METEORITES. B.-G. Choi¹, J. I. Lee², I. Ahn^{1,2}, J. M. Han¹ and M. Kusakabe², ¹Dept. of Earth Science Education, Seoul National University, Seoul, Korea 151-748. E-mail: bchoi@snu.ac.kr. ²Korea Polar Research Institute, Incheon, Korea.

Introduction: In January 2007, the first Korea Expedition for Antarctic meteorites (KOREAMET) conducted a search for meteorites on the blue ice fields at Martin/Nash/Pirrit Hills and Thiel Mountains, West Antarctica [1]. No meteorite was found in Martin/Nash/Pirrit Hills after 2 weeks of survey. Five meteorites were recovered on the blue ice field at Moulton Escarpment, Thiel Mountains (85°10'S, 94°33'W) during 7 hours. The meteorites were put into Teflon bags and then vacuum sealed with plastic bags. They were transported to the lab under freezing temperature and the bags were opened in Globe box filled with high purity N₂ gas. Small amount of samples were taken for petrological study and oxygen isotopic measurements.

Petrological characteristics: Masses of five meteorites vary from 193 to 432 grams. Surface textures and magnetic susceptibility (64 to 217 x 10⁻³ SI unit) measured at the field show that they are ordinary chondrites according to [2]. Petrological characteristics of five meteorites are those of typical equilibrated ordinary chondrites. Three of them have no clear boundaries between chondrules and matrix indicating they are type-6. Olivine and pyroxene in these meteorites are highly equilibrated. The others show clear chondrule textures however minerals are chemically equilibrated thus classified as type 5. According to fayalite contents, two of them (Fa ~20) belong to H-group, and the others (Fa ~ 30) LL-group. At least near surfaces of them show moderate degree of weathering, e.g., having iron oxide veins.

Oxygen isotopic compositions: Oxygen isotopic compositions were measured with CO₂ laser fluorination system at Korea Polar Research Institute. About 2 mg of samples were used for each run. The results agree with previously measured Antarctic ordinary chondrites [3] that show contamination by Antarctic ice, i.e., shifted to lighter isotopic composition. However data of samples after HCl treatment (2 min in 6 N HCl) in order to remove terrestrial weathering products fall in the ranges of unweathered ordinary chondrites [3]. Classification based on oxygen isotopic compositions ($\Delta^{18}\text{O}$ values are 0.7 to 1.1‰) well agrees with those of petrological study.

Summary and conclusions: Five new Antarctic meteorites were recovered at Thiel Mountains, West Antarctica by KOREAMET. Based on magnetic susceptibility, petrological characteristics and oxygen isotopic compositions two of them are H6, two are LL5 and one is LL6.

References: [1] B.-G. Choi et al. 2007. The 31st Symposium on Antarctic Meteorites, *submitted*. [2] Folco L. et al. 2006. *Meteoritics & Planetary Science* 41, 343-353. [3] Clayton et al. 1991. *Geochimica et Cosmochimica Acta* 55, 2317-2337.