

energy dispersive X-ray microanalyses (EDXMA) and X-ray diffraction photo-graphies (XDP). A spherule from the Allan Hills has structures of Mg-rich olivine and magnetite with high Fe, Ni and S contents, which are similar to those of the Allende meteorite and Brownlee particles. It is enriched with siderophile elements such as Co, Ni, Os, Ir and Au by factors of 1.5–3 relative to chondritic abundances. Two spherules from Mizuho Station have a perovskite structure with high Cr and Fe contents, show unusual abundance in rare earth elements; Nd and Sm are highly enriched in them by factors of 2.5–10 relative to those of the terrestrial perovskites. Another one with stainless-steel-like composition (Fe; 65%, Cr; 10%, Ni; 7% in weight) from Mizuho Station shows a similar concentration of rare earth elements, depressed by a factor of 0.02 relative to those of the perovskite spherules.

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SEASONAL VARIATION OF pH VALUES IN SNOW AT HALLEY BASE AND MIZUHO STATION, ANTARCTICA (Abstract)

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Profiles of pH in 1.7 m deep pit samples and a 21.8 m deep core obtained at Brunt Ice Shelf near British Halley Base in 1982 indicate clear seasonal variation with an annual minimum in summer. Furthermore, pH of drifted snow collected at Mizuho Station from February 1977 to January 1978 shows also clear seasonal variation, being high (5.4–5.7) during a period from early March to early November and low (4.8–5.3) during summer. The decrease in pH values in summer may be mainly due to the enhancements of fallout of sulfuric acid aerosol derived from stratospheric sulfate gases which subsided during summer.

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SEASONAL VARIATION OF OXYGEN ISOTOPIC COMPOSITION OF DRIFTING SNOW AT MIZUHO STATION, EAST ANTARCTICA (Abstract)

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The variation of oxygen isotopic composition ($\delta^{18}\text{O}$) of fallen snow at Syowa Station is caused by the supply of ^{18}O -rich water vapor resulting from the approach of circumpolar cyclone (K. KATO: *Nature*, **272**, 46, 1978). However, that of drifting snow at Mizuho Station in the austral winter of 1974 was not attributable to the same cause (KATO *et al.*: *Mem. Natl Inst. Polar Res., Spec. Issue*, **7**, 245, 1978). In order to know the seasonal variation of $\delta^{18}\text{O}$ of drifting snow at Mizuho Station and to investigate the transportation process of water vapor to the station and the formation process of snow (cooling process for its formation), samples of drifted snow at the station were collected during the course of 1977 and their $\delta^{18}\text{O}$ values were determined.