

The followings are published in Vol.1(1).

Statistics of Antarctic surface meteorology based on hourly data in 1957–2007 at Syowa Station.

Kaoru Sato, Naohiko Hirasawa

The mean temperature, sea-level pressure (SLP) and wind speed at Syowa Station over the 50 years are estimated to be -10.5°C , 986hPa and 6.6ms^{-1} , respectively. The spectral analysis showed that they have different time-scale variations, there was no significant trend for annual mean surface temperature, and that inter-annual variation of SLP was well correlated with the Antarctic Oscillation indices.

Trends in cloud amount and radiative fluxes at Syowa Station, Antarctica.

Takashi Yamanouchi, Yasuo Shudou

Based on the Syowa 50 years' meteorological data, gradual increase of cloud amount in these years was detected. The paper discusses the relationship between the cloud amount and radiation fluxes, and their seasonal variation.

Temperature and oxygen fugacity constraints on CK and R chondrites and implications for water and oxidation in the early solar system. Kevin Righter

Petrographic and mineralogical analysis of CK and R chondrites was conducted especially by focusing on the opaque minerals. Oxygen fugacity calculated for CV and R chondrites indicates these meteorites have experienced two different oxidation mechanisms.

Petrology of an unusual monomict ureilite, NWA 1241. Yukio Ikeda

The suessite included in the NWA 1241 was shown to be produced at temperatures around 1400K and oxygen fugacity of 10–20 bars. The two-stage reduction process NWA 1241 experienced is discussed in the paper.

Quantitative evaluation of the counterbalance between photosynthetic stimulation and depression caused by low partial pressure of O_2 and CO_2 in alpine atmospheres.

Tsuyoshi Sakata, Naoki Kachi, Yota Yokoi

The photosynthesis of *Fagus crenata* leaves were compared at lowland (0m) and at highland (2360m). While low partial pressure of CO_2 inhibits photosynthesis, low

partial pressure of O_2 is shown to stimulate the photosynthesis by mitigating O_2 -inhibition of Rubisco. A probable theoretical model is proposed.