CONденСATION EXPERIMENT OF ICES FROM THE INTERSTELLAR GAS
A. Kouchi

To cite this version:

HAL Id: jpa-00226252
https://hal.archives-ouvertes.fr/jpa-00226252
Submitted on 1 Jan 1987

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L’archive ouverte pluridisciplinaire HAL, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d’enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.
CONDENSATION EXPERIMENT OF ICES FROM THE INTERSTELLAR GAS

A. KOUCHI

Institute of Low Temperature Sciences, Hokkaido University, Sapporo 060, Japan

Abstract: The importance of ices on the evolution of interstellar space is widely recognized. Some studies, both experimental and theoretical, have been carried out on the condensation of ices from the interstellar gas. However, phase relation of multi-component ices have not be investigated.

We have been performing condensation experiment of ices from the gas of interstellar composition analog at temperatures between 10 and 150 K. The structure and chemical composition of the ices are analyzed as a function of condensation temperature by mass spectrometry and X-ray diffraction, respectively. Amorphous-crystal transition of the ices except for H2O ices are also investigated. The result of the experiment will be presented.

COMMENTS

K. ROESSLER

Does it make a difference if you take round condensation plates, crude surfaces (like in space) instead of your experimental plates for condensation?

Answer:

I could not answer at present. However, we are planning to perform such experiment using very fine particles about 1000 ~ 10 000 Å in diameter made by gas evaporation method.

B. HALE

Can you estimate the temperature derivative of the vapor pressures from yours data?

Answer:

Although it is possible, we did not estimate because the precision of measurement of vapour pressure is bad.

D. D. KLUG

What was your condensation rate used to determine the transition temperature for amorphous to cubic ice as a function of condensation temperature? How would you expect the transition temperature to change with a change of condensation rate?

Answer:

Condensation rate is about 2000 Å/hour.