

## **Foreword**

This volume is the proceedings of “The Twelfth Symposium on Coordinated Observations of the Ionosphere and the Magnetosphere in the Polar Regions” which was held at the National Institute of Polar Research (NIPR) on January 17–18th, 1989. The NIPR annual symposia are devoted to discussing significant scientific results of studies on the ionosphere and the magnetosphere in the polar regions. The twelfth symposium consisted of a poster presentation and the following eight oral sessions: 1) Heliosphere-magnetosphere-ionosphere coupling, 2) Disturbances in the ionosphere, 3) Dynamics of middle atmosphere and thermosphere, 4) Future program for observation in the polar regions, 5) ELF-HF plasma waves, 6) ULF wave phenomena, 7) Geomagnetically conjugate observations, 8) Aurora and related phenomena.

The present volume contains 11 selected scientific papers among 55 individual contributions presented at the symposium. It is hoped that this Proceedings of the NIPR Symposium on Upper Atmosphere Physics will be valuable to those who are interested in the ionospheric and magnetospheric phenomena in the polar regions and also to those who are concerned with Antarctic research activities.

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