Preface

Scientific observation by the use of balloons has been one of the research projects at the Institute of Space and Aeronautical Science, University of Tokyo, since 1966. It is, like our rocket project, not simply an isolated project at the Institute, but essentially of the character of a national scientific project in Japan to be materialized by positive participation of scientists and engineers in the whole country who are more or less interested in this field of study.

In order to accomplish the purpose, the Institute has organized Large Balloon Committee as the Headquarter of the balloon project. The Committee is composed of members from outside as well as inside the Institute who represent various related fields of science, respectively. The Committee determines the principal policy concerning the balloon project, while the Balloon Group at the Institute is in charge of the execution of field experiments including launching, flight and recovery of balloons and data telemetering, as well as the development of high-performance balloon and accessory according to the annual program made by the Committee.

The balloon project has so far been conducted very smoothly. In total, 198 balloons, large and small, have been launched during these seven years and a variety of precious scientific results have been obtained by the balloon experiments. The development researches on balloon engineering have also been carried out mainly by the Balloon Group. As for the maximum volume of scientific balloons, 2×10^5 m^3 balloons have already been at the final stage of development and will be used for scientific observation in the near future.

The result s obtained in the balloon project are to be reported promptly at the annual Balloon Symposium held yearly at the Institute, and after detailed examination and rearrangement, they are published as scientific papers either on the special issue of Bulletin of the Institute or on various scientific journals according to their specialities.

This special issue on the balloon project of Bulletin of the Institute contains thirteen papers in total, two papers on balloon engineering, three on accessory and physical instrument, and six on scientific observation. It is hoped that the readers would get comprehensive understanding on the present status of the balloon project by this issue, though the papers in the issure are not all of the results recently obtained in the balloon project.

March 7, 1974

Ryuma Kawamura
Chairman, Large Balloon
Committee

巻　頭　言

宇宙航空研究所は，1966年以来すでに7年間にわたり全国共同研究事業である大気球観測実験を担当してきた．この事業の将来計画ならびに毎年度の実施計画の基本線は関係専門分野の代表により構成される大気球専門委員会が決定し，その実行を宇宙研の気球グループ（気球部門，協力部門，観測部気球班，その他）が担当している．

このような組織のもとに大気球観測事業は極めて円滑に運営され，これまでに大小198機の気球を放球し，各種の科学観測において多大の成果を挙げてきた．また科学観測の要求に応じて高性能大型気球ならびに附属機器の開発が着々と進められ，気球の最大容積で言えば現在すでに20万立方メートルの気球の開発研究がほぼ完了して実用の域に達しようとしている．

気球観測事業において得られた学問上の成果は，毎年1回宇宙研の主催する大気球シンポシウムで一応報告された後，再検討を加えて論文となり，宇宙研報告大気球特集号や各専門分野の学会誌などに発表される．

この特集号には大気球関係の研究開発に関する最近の成果が13篇の論文として集録されている．その内容は気球工学関係4篇，搭載機器ならびに観測機器関係3篇，および，科学観測研究6篇よりなっている．科学観測の成果は専門学会誌に発表される場合が多いから，ここに掲載するものが全部ではないが，本特集号によって大気球観測事業の活動状況を理解することができよう．

1974年3月

大気球専門委員会
委員長　河村龍馬