ADVANCES IN MAGNETOSPHERIC PHYSICS
WITH GEOS-1 AND ISEE

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EDITED BY

K. KNOTT

and

A. DURNEY and K. OGILVIE

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INTRODUCTION

(Opening Address of 13th ESLAB Symposium)

With GEOS and ISEE occupying a major part of the ESA scientific programme it was clear several years ago that a 'natural' basis for the 1978 ESLAB Annual Symposium would be the early data from these two spacecraft. During the 1976 meeting of the European Geophysical Society in Amsterdam it became apparent to me that a much wider community was interested and that in particular Working Group 2 of COSPAR was considering a GEOS session during its 1978 meeting here in Innsbruck. This was of course as it ought to be because GEOS had been adopted as the reference spacecraft for the International Magnetospheric Study. After some discussions with COSPAR and with the organizers of the STP Symposium which was held here last week we felt that in the interest of customer relations and following good common sense we should give up some of our independence in 1978 and merge our Symposium with COSPAR. I would gratefully acknowledge the co-operation of COSPAR's Working Group 2 chairman and vice-chairman, the active support of the President of COSPAR and the 'gentleman's agreement' with the STP programme committee which arranged that the new ISEE and GEOS results were routed to this Symposium rather than to the STP.

I have talked about how we came to have this joint Symposium. Perhaps I should tell you too how we came close to having no Symposium. Just before dawn on 20 April last year Karl Knott and I stood on the roof of a building at NASA's Eastern Test Range watching one of the most colourful launches I have seen. At ground level it was still dark and the rocket took off illuminating the surrounding countryside in orange. Higher up dawn had arrived and the vehicle trail was beautifully illuminated in a cloudless sky. All looked perfect. A short time later, back within the control centre we learned however, that GEOS could not be placed in a geostationary orbit and indeed we were to discover that we were lucky to be in any orbit at all. Worries about radiation damage forced us to make a quick decision between the only two real alternatives which were injection into a 12-hour orbit with apogee close to the original geostationary position or injection into a 24-hour orbit with apogee in interplanetary space for much of the year. We chose the 12-hour orbit and are still in the process of being forgiven by several experimenters - especially (p)ioneers - who longed to get into the solar wind with their sophisticated new analyser.

Because of this mishap GEOS could no longer be reasonably described as the reference spacecraft for the IMS and in a formal sense had to be classified as a failure. In the next two days we are to hear of some of the excellent scientific measurements made during this 'failed' mission. The spacecraft and experiments have worked very well.

I believe the idea of ESA and NASA getting together on what is now called the ISEE mission came from Dr. Meredith of Goddard Space Flight Centre during a visit to Space Science Department at ESTEC. At that time many people were thinking in terms of

flying several spacecraft together through the magnetosphere in order to sort out space/time ambiguities and NASA was considering a mission called IMP K-K'. After several changes of name we eventually arrived at 'International Sun Earth Explorer' and in October last year NASA launched the first two of the three-satellite mission - the 'daughter' spacecraft having been built by ESA. Data has been a bit slow in appearing - in particular the much discussed data pool tape - and I am looking forward to seeing the first results at this Symposium. It will be particularly interesting to me to see where the two spacecraft have made major advances over what could have been achieved by one spacecraft. This demonstration is required in order to reply to those critics who dismissed the mission as just one more trip at random into the magnetosphere.

We trust that our ESA contributions to ISEE and GEOS and our participation in the IMSCIE Boulder co-ordination centre have been useful inputs to the IMS. We hope too that this Symposium will be a significant landmark in the scientific output from the IMS. We thank you all for your interest and look forward to two days of exciting contributions and lively discussion.

D. E. PAGE

Head Space Science Department of ESA