

BRAZIL'S FUTURE PLANS FOR UPPER ATMOSPHERE RESEARCH IN ANTARCTICA (ABSTRACT)

Pierre KAUFMANN

INPE: Instituto de Pesquisas Espaciais, CNPq, C.P. 515, 12.200 São José dos Campos, SP, Brazil

The future plans of Brazil in Antarctica, on upper atmosphere physics research consider the full exploration of Ferraz Antarctic Station for a number of ground-based and space experiments. A number of research programs are considered to be implemented in collaboration with programs developed by other countries. The present note summarizes them very briefly.

The project on *geomagnetism and geoelectricity* is starting in the summer of 1984/85 and is planned for long-term operation in 1986. It considers simultaneous geomagnetic and geoelectric (magnetotelluric) measurements with the use of a flux-gate magnetometer (geomagnetic components H, D and Z) and a field mill detector. Correlation to data from other stations will be essential for these researches. For a later phase, there are plans for similar measurements at several different sites. This project is being carried out by Dr. N. B. TRIVEDI and associates, from the Instituto de Pesquisas Espaciais (INPE).

An extense program on *upper ionosphere physics* is considered with the operation of a digisonde/ionosonde both at Ferraz Station, and on a mobile station on board of the Brazilian polar ship BARÃO DE TEFFÉ. The project also considers multi-riometer measurements in different directions, and H. F. field strength monitoring of medium distance transmissions, simultaneously in Antarctica and Brazil. This project will start when funds are made available. It will be carried out by Dr. M. A. ABDU and associates, from INPE.

Low ionosphere physics and V. L. F. propagation problems were successfully investigated in the past three years, and the plans consider long-term studies at Ferraz Station, with several tracking receivers controlled by atomic standards. Apart from a number of standard propagation effects to be searched, special attention will be given to large transient effects (such as large galactic X-ray bursters, meteor showers) and to fast transient effects (such as Trimpri events). Studies correlated to data from other stations will be strongly emphasized. The project is carried out by Drs. L. RIZZO PIAZZA, P. KAUFMANN and associates, from INPE with the collaboration of Instituto de Atividades Espaciais (IAE-CTA) and Observatório Nacional (ON).

Space experiments using balloons and rockets consider measurements of X-rays, γ -rays, electric fields and particle precipitations, with payloads carried by balloons, and by Brazilian-made rockets. Balloon flights were carried out in 1983/84 summer and are to be repeated in 1984/85. Rockets Sonda II (2 stages, able to launch about 50 kg at 70–110 km), and Sonda III (3 stages, able to launch about 100 kg at 150–250 km) were made available, for experiments later in this decade. Coordination of these space experiments to ground-based experiments and various sites from different countries, is highly desirable. The balloon project is being carried out by Drs. U. JAYANTHI, F. GONZALEZ BLANCO and associates, from INPE. The rocket experiments will be carried out in a joint effort by scientists from INPE and IAE-CTA.

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