1.Classification *INPE.COM 3/NTE* *629.783:621.38SR*	2.Period	4.Distribution Criterion internal ☐ external X
3.Key Words (selected by the author) *Remote Sensing* *SKYLAB*		
5.Report No. *INPE-793-NTE/043*	6.Date *December, 1975*	7.Revised by *Rene Antonio Novaes*
8. Title and Sub-title *COLLECTION OF RELEVANT RESULTS OBTAINED WITH THE SKYLAB IMAGES BY THE INSTITUTE FOR SPACE RESEARCH (INPE).* *(FINAL REPORT)*		9.Authorized by *Fernando de Mendonça* *Director*
10.Sector *CRT*	Code *4.02*	11.No. of Copies *50*
12.Authorship *João Botelho Machado, Antonio T. Tardin, Natalio F. Koffler, Nilton T. Higa, Hardy Jost, Renato Herz, Eric R. Stoner, José Carlos Maia, Ravindra Kumar* 13.Signature of first author *Antonio Botelho Tardin*		14.No. of Pages *30* 15.Price

16.Summary/Notes

Principal Investigator:

Dr. Fernando de Mendonça
Director
INPE
C.P. 515
12.200 - São José dos Campos - SP
BRASIL

NASA Headquarters Proposal Registration: 9C36

17.Remarks *Our Proposal to NASA (Report LAFE-171) for participating in the SKYLAB program presented three disciplines namely: Soil, Mineral and Sea Resources. In this report we show final results in only two of these disciplines and in others besides.*

TABLE OF CONTENTS

CHAPTER I

INTRODUCTION

CHAPTER I

INTRODUCTION

This final report contains a collection of information on results and findings of a few discipline investigators, working for the Brazilian Institute of Space Research (Instituto de Pesquisas Espaciais - INPE), on the earth resources studies program (SERE Program), based on data acquired during the Missions 2, 3 and 4 of the manned spacecraft SKYLAB, as intended in the document "Research and Development Proposal for Investigation Using Data from the Earth Resources Experiment Package (EREP)" of the SKYLAB, submitted to the National Aeronautics and Space Administration (NASA), Earth Observations Program Office, Office of Space Science and Applications (Report LAFE-171), in October 1971, complemented by additional information submitted, as Addenda, to the above proposal in May 1972 (Addenda to Report LAFE-171). The discipline investigators have endeavoured, under close coordination of the Principal Investigator, Dr. Fernando de Mendonça, to follow the provisions of the Statement of work for the Investigation of SKYLAB EREP Data, NASA Headquarters Proposal Registration Nº 9636", signed by the Principal Investigator in 8 March 1973.

As it is well-known, in Brazil, the responsibilities for the identification and transfer from external sources, the adaptation to national needs and limitations, and the dissemination among the users community, of the remote sensing of earth resources technology (SERE Program) have been

concentrated within the national space agency (INPE). At the very beginning of the program it was recognized that, in order to accomplish those ample objectives, the space agency had to include, in its already large range of disciplines, an in-house capability to work in all aspects of the remote sensed data interpretation employing earth sciences specialists in the various fields where the new technology is expected to provide benefits.

To this end, INPE has established, apart from its data acquiring and processing facilities and services, earth sciences interpretation teams organized under the titles of land, mineral and marine resources, geography and geodesy, and has acquired an Image-100-GE Multispectral Analyzer. This internal capability in the face of a strong outside demand of able specialists presented by an expanding market (a very desirable fact for the country as a whole), is working under quite difficult conditions, that could, in short, be described as excessively fluid in regard to the personnel component. The interpretation work force is, thus, composed of disciplinary groups integrated by a few stable investigators and a stream or flux of young university graduates under a continuous and ceaseless on-the-job and formal training, making up a combination of post-graduate university education and limited regular routine work type of operation having a fast man-power turn over rate.

In consequence, the bulk of the work with the SKYLAB data, that is being done at the INPE, is for instructional purposes, and the investigations included in the present report are not representative of

the extent of use of all the data supplied by NASA. They are simply samples thought to be relevant in the demonstration of the usefulness of the data when applied to each one of disciplines and, due to the reasons already present, and others, have the following characteristics:

With a few exceptions, the initially named co-investigators are no longer with INPE. The modified work force could not properly attend to all the objectives originally proposed and, some of the intended work could not be done for lack of a few images or problems with cloud coverage. Besides, since the original work proposal, Brazilian government priorities have changed which result is less emphasis on objectives presented in said proposal.

The data from the experimental microwave sensors, the microwave radiometer, scatterometer and altimeter, and the L-band radiometer, were not put in immediate practical use, since they were not considered significant for the on-going studies at the INPE. Therefore, interpretation efforts were concentrated on the products of the imaging sensors, specially the multispectral photographic camera and the earth terrain camera, the map of the following page shows a summary of the photographic data received.

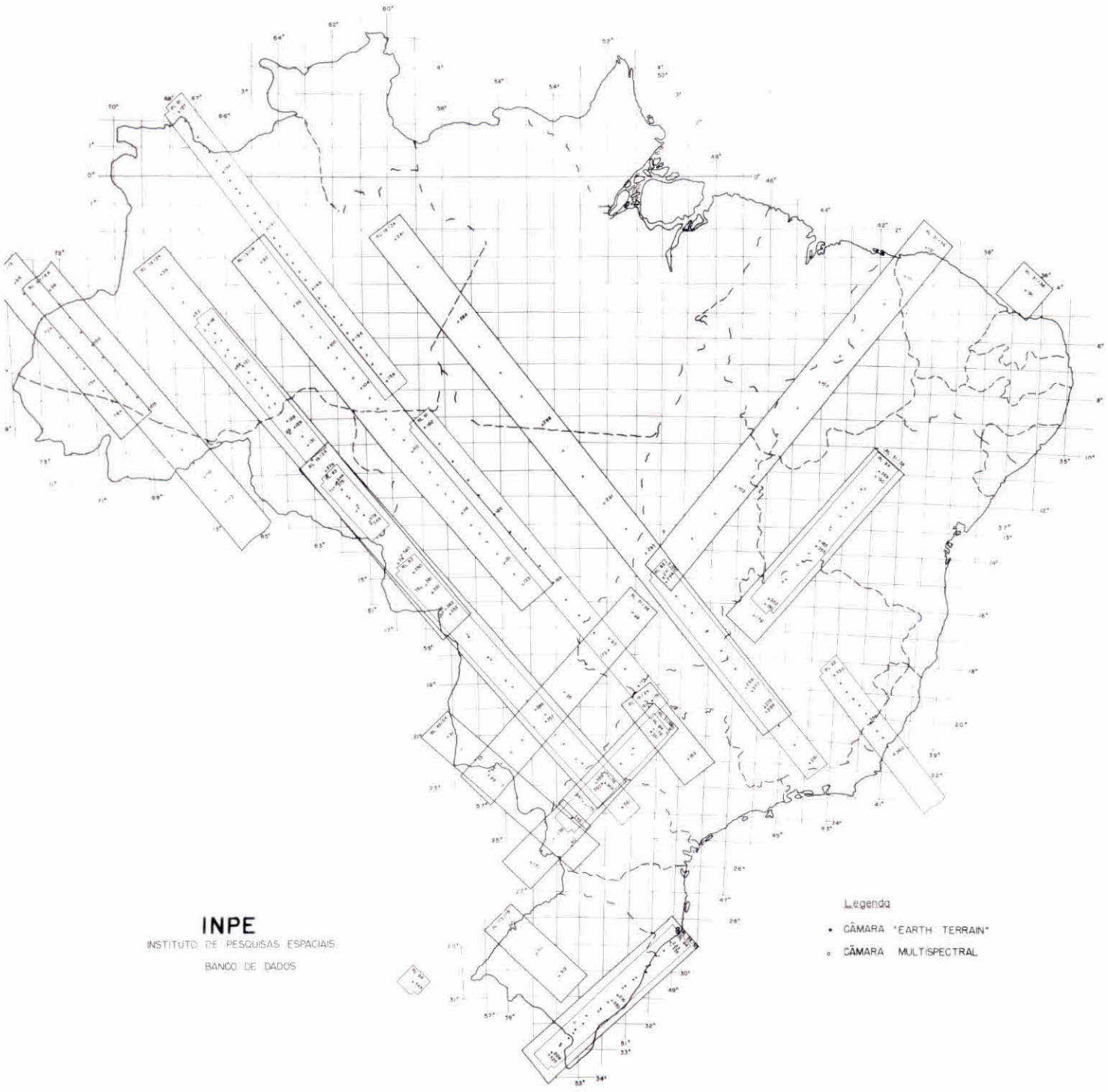

Fig. I.1 - Summary of photographic data received.

CHAPTER II

APPLICABILITY OF SKYLAB DATA TO LAND RESOURCES STUDIES

2.1 - Survey of areas occupied by coffee and wheat in Northwestern Paranã through automatic data processing of orbital imagery

prepared by:

Antonio T. Tardin

2.2 - Utilization of orbital and aircraft images in the study of soils originating from Bauru Formation sandstone

prepared by:

Natalio F. Koffler

2.3 - Evaluation of current land use in the region of Campo Grande, Mato Grosso, Brazil by analysis of SKYLAB S190A images

prepared by:

Nilton T. Higa