MONTHLY PLANS AND PROGRESS REPORT

Title:	Evaluation of Usefulness of SKYLAB EREP S-190 and S-192 Imagery in Multistage Forest Surveys
Period Covered:	February 28, 1973 to March 31, 1973
Contract:	NAS 9-13289 EREP Investigation #473
EarthSat Project No.	G-091
Principal Investigator:	Mr. Philip G. Langley

OVERALL STATUS

Through this first reporting period, February 28, 1973 to March 31, 1973, we have just begun to make progress towards our overall objectives. We have accomplished our first goal of developing a set of transforms for the location and transfer of boundaries, areas and significant points of interest from topographic maps to aerial photos and space platform imagery. We are ready to apply similar transforms to SKYLAB/EREP S-190 and S-192 imagery when it becomes available.

In addition, our current efforts involve the development of software and technology for use in the analysis of photo interpretation data for species identification and timber volume prediction. This work includes machine-oriented digital analysis as well as manual photo interpretation techniques.

EXPECTED ACCOMPLISHMENTS FOR NEXT REPORTING PERIOD

During this period we expect to keep our present effort current in respect to the direction of our work. We would hope to realize approximately 20% accomplishment in our software development for digital analysis. We would also expect to have made a 25% effort in our manual interpretation techniques which will be applicable to SKYLAB imagery.

SIGNIFICANT RESULTS FOR THIS PERIOD

To transfer points from topographic maps to space platform imagery we developed a generalized resection program in which any resection parameter can be enforced in the solution to any desired extent. This allows for the use of orbital parameters in the resection solution.

In addition to the resection program, we developed a technique applicable to space platform photography with which elevations can be assigned to digitized map points through the use of digital terrain models. Using this technique tedious manual elevation assignment for thousands of digitized points can be avoided.

The software to project the map points to the space platform image has also been developed and tested. We are now testing programs to relate the projected image coordinates to digital image tape locations so that we will be able to retrieve any desired sample unit from the digital tapes with considerable accuracy.

SUMMARY OUTLOOK FOR REMAINING EFFORT TO BE PERFORMED

We will continue to develop our software capability for digital analysis over the next several months. This is a major effort on our part and will require many man-months of time in addition to computer costs.

Manual photointerpretive methods will be continually tested on existing space platform imagery and high-altitude (60K) aircraft images. When SKYLAB imagery is available we will transfer our efforts to those image data.

The development of the multistage sampling statistical techniques shall continue secondary to the present effort until actual SKYLAB data are available. At that time we will accelerate this effort.

TRAVEL PLANS

None for the next reporting period.