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Experiment to evaluate feasibility of utilizing SKYLAB-EREP remote sensing data for tectonic analysis of the Bighorn Mountains region, Wyoming-Montana.

Quarterly Progress Report, April 1-June 30, 1974

EREP #203393

Contract #NAS 9-13313

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Principal Investigator - Richard A. Hoppin

Date of Report - July 11, 1974

NASA Technical Monitor - Martin Miller, NASA JSC, PIMO, Mail Code TF6, Houston Texas 77058

(E74-10599) EXPERIMENT TO EVALUATE
FEASIBILITY OF UTILIZING SKYLAB-EREP
REMOTE SENSING DATA FOR TECTONIC ANALYSIS
OF THE BIGHORN MOUNTAINS REGION, (Iowa
Univ.) 2 p HC \$4.00 CSCL 08G G3/13 00599
N74-29684
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STATUS SUMMARY

Imagery received during period

- a. 9 x 9 transparencies of Track 59, SL-3 (same as 70 mm material in previous report)
- b. 3 strips of S-192 screening film from SL-4
- c. The S-190A, S-190B SL3, Track 45, Sept. 12, 1973 imagery that had been requested
- d. Hand held 35/70mm transparencies

ACCOMPLISHMENTS FOR PERIOD

The PI, CI Baker, and Research Assistant Lehman were all in the field from the last week in May through June. As the imagery noted was received just before we left, we were only able to quickly scan the data. The hand held transparencies contain a number of superb regional scenes which were used as slides in two talks: 1) a paper presented at the Basement Tectonics Conference in Salt Lake City (abstract included in previous report), 2) a lecture on ERTS/SKYLAB to students at Iowa State University field camp, Shell, Wyoming.

The PI used two frames of SKYLAB S190A color IR and color 9 x 9 transparencies for field checking in the Owl Creek Mountains. He found that the folds and major faults could be easily checked out but the previously noted linears are hard to spot on the ground without much more field work on the ground. He also spent four days of reconnaissance in the Black Hills selecting areas for three weeks of field checking in August by research assistant Alan Swenson.

Baker was utilizing imagery for vegetation analysis along the flanks of the Bighorns. Lehman was doing a structural problem in Shell Canyon of the Bighorns and is evaluating the imagery as a part of his problem. As the glaciated areas were either cloud covered or not crossed by Skylab on other tracks, we shall not be able to carry out this phase of the project [SL-4 imagery received a few days ago does not help here, either]. As a result, and because we have considerably better imagery in the Black Hills we are shifting our field checking to that area.

In summary, our main efforts were in the field and evaluation was only very preliminary.

ACTIVITIES PLANNED FOR NEXT QUARTER

The PI will be attending the SKYLAB meeting July 16-18 where he particularly wants to get a better idea of the way in which S-192 data is being used. The further field checking in the Black Hills was noted above. Hopefully, the rest of the SL-4 data will be received. By September we should be in good shape to begin really efficient analysis and correlation with the field work.