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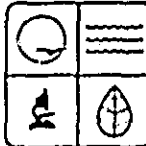
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NASA CR. 149439

Joseph P. Bondale
GOVERNOR



missouri department of natural resources

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January 11, 1977

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Mr. James Broderick
Technical Officer, Code 902
Goddard Space Flight Center
National Aeronautics and Space Administration
Greenbelt, Maryland 20771

Subject: NAS 5-20937 Report for the period June-September, 1976.

- 1) Computer compatible tapes for two scenes of southeast Missouri were ordered. Specifically they are: 1215-16121 (Feb. 23, 1973) which covers the St. Francois Mountains region and the adjoining frame 1216-16175 (Feb. 24, 1973) which covers the area immediately to the east and overlaps the Viburnum Trend lead district. LANDSAT-1 rather than LANDSAT-2 scenes were chosen as to date they were the better imagery of the area that we have seen.

Arrangements for processing of the tapes were made with Robert A. Haralick, University of Kansas, Space Technology Center, Lawrence, Kansas and Hardy Pottinger, Computer Center, University of Missouri at Rolla. The Space Technology Center manipulation is to include edge enhancement and display on their analog-digital image processing system, the IDECS (Image Discrimination, Enhancement and Combination System). The University of Missouri-Rolla processing will consist primarily of displays of the demultiplexed data at varying levels of intensity. The aim of both is the enhancement of linear and arcuate traces.

- 2) Geza and Eva B. Kisvarsanyi completed two papers which included data developed in the study. One, Structural Lineaments and Mineralization in Southeast Missouri by G. and E. B. Kisvarsanyi points up the utilization of LANDSAT-1 and LANDSAT-2 to supplement information obtained from conventional means as well as the assessment and use of satellite-imagery as a basic data source. The second report Missouri Precambrian Revisited by E. B. Kisvarsanyi refers to the use of LANDSAT imagery in regional interpretations of structure and the apparent reflection of major Precambrian basement structures and lineaments on the imagery. Both reports are published in Missouri Department of Natural Resources, Geological Survey Report of Investigations No. 61, Studies in Precambrian Geology of Missouri, Eva B. Kisvarsanyi, Editor, 1976.

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ANALYSIS OF MISSOURI AND THE CZARK ICOME
USING ERIS-B SATELLITE IMAGERY PROGRESS
Report, Jun. - Sep. 1976 (Missouri State
Dept. of Natural Resources) 3 p

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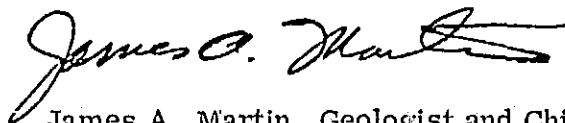
Mr. James Broderick

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- 3) Field work was conducted in the St. Francois Mountains area and in the south and south-central parts of the State by co-investigators Charles E. Robertson and Ardel W. Rueff. Purpose of each was the field checking and reconnaissance mapping along selected linears, arcuates and circular features. Shearing, jointing and faults as well as minor mineralization was observed along some while others showed no surface indications. In addition on-going geologic mapping programs have compared field data with the linears observed on the LANDSAT imagery. A map showing the general areas is attached.

Sincerely yours,



James A. Martin, Geologist and Chief
Mineral Resources Data and Research Section
Geological Survey

its
JAM:gcr

Enclosure

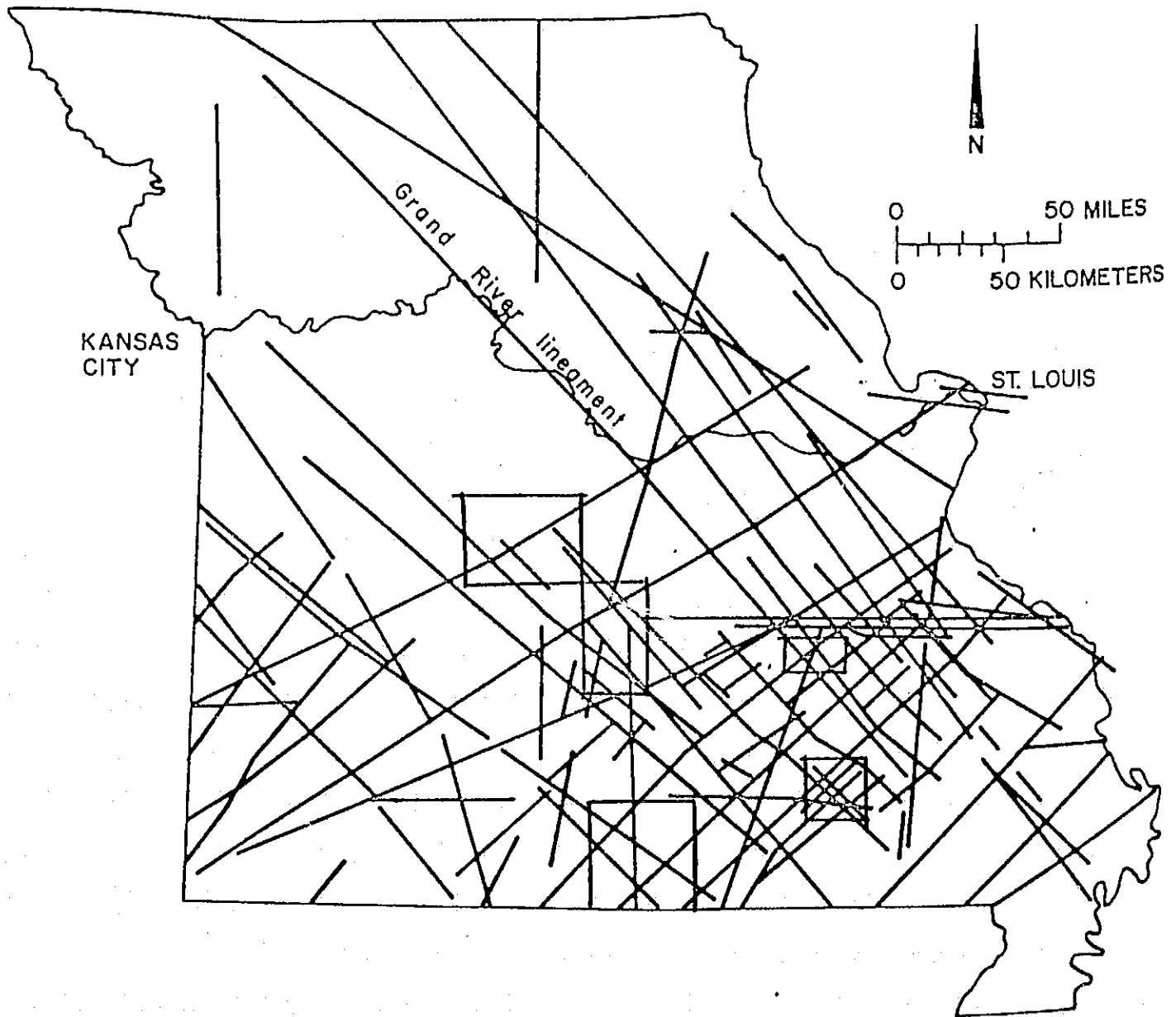


Figure 1

Lineament map of Missouri based on LANDSAT-1 and LANDSAT-2 remote-sensing multi-spectral imagery.