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GEOGRAPHIC ANALYSIS OF LANDSCAPE CHANGE FROM ERTS-I IMAGERY

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The author has identified the following significant results. Data from low altitude flights and ground truth observations confirm the existence of significant strip mining activity at the Cumberland Plateau, Tennessee Test Site. A map (1:120,000) depicting landscape changes associated with strip mining on the Cumberland Plateau has been completed. The map was prepared from NASA generated RB-57 imagery for April 1972 and ERTS imagery for October 1972 and was enlarged to a scale of 1:120,000. A second map shows the generalized forest cover for the state of Tennessee. The data were derived entirely from five ERTS-I images and reduced to an original map scale of 1:2.4 million. Total time required was three hours. To have produced such a map with RB-57 imagery would have required 146 images, 60 man days, and $150,000 worth of imagery. ERTS does indeed present significant cost benefits. Our most significant discovery reported at this time concerns the detection, identification, and mapping of plowed fields in northern Alabama (Sand Mountain), northern Georgia and southeastern Tennessee. The agricultural scene has heretofore eluded our analysis, however, in an April ERTS observation, plowed ground and bare soil surfaces were easily detected and mapped from MSS Band 5.

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