General Disclaimer

One or more of the Following Statements may affect this Document

- This document has been reproduced from the best copy furnished by the organizational source. It is being released in the interest of making available as much information as possible.

- This document may contain data, which exceeds the sheet parameters. It was furnished in this condition by the organizational source and is the best copy available.

- This document may contain tone-on-tone or color graphs, charts and/or pictures, which have been reproduced in black and white.

- This document is paginated as submitted by the original source.

- Portions of this document are not fully legible due to the historical nature of some of the material. However, it is the best reproduction available from the original submission.
15 February 1983

Dr. H. H. Thomas  
Technical Officer, Code 922  
NASA/Goddard Space Flight Center  
Greenbelt, Maryland 20771

Re: First Quarterly Report - Contract NAS 5-27488  
for the Period 12 October 1982 - 31 December 1982

Dear Dr. Thomas:

Enclosed herewith are 5 copies of the subject First Quarterly Report.

Sincerely yours,

Ronald H. Estes  
Project Manager

Enclosures

cc: Mr. Alton D. Payne, Jr., Contracting Officer, Code 285  
Publications Branch, Code 251  
Office of Patent Counsel, Code 204

(ES3-10210) REMANENT MAGNETIZATION AND  
THREE-DIMENSIONAL DENSITY MODEL OF THE  
kENTUCKY ANOMALY REGION Quarterly Report,  
12 Oct. - 31 Dec. 1982 (Business and  
Technological Systems, Inc.) 3 p  
G3/43 00210
First Quarterly Report

REMANENT MAGNETIZATION AND
THREE-DIMENSIONAL DENSITY MODEL
OF THE KENTUCKY ANOMALY REGION
For the period
12 October 1982 - 31 December 1982

Under
Contract NAS 5-27488

Submitted to
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Goddard Space Flight Center
Greenbelt, Maryland 20771
1.0 TECHNICAL ACCOMPLISHMENTS AND SCHEDULING

During the first quarter of the contract period, the following work has been carried out.

1.1) Existing software has been modified to handle detailed 3-D density and magnetization models of the Kentucky body and is being tested. Gravity and magnetic anomaly data sets are ready to use. A preliminary block model is under construction using the 1:1,000,000 maps and is nearly ready for computation.

1.2) An x-y grid to overlay the 1:2,500,000 Albers maps and keyed to the 1:1,000,000 scale block models has been created. Software has been developed which will generate a smoothed MagSat data set over this grid; this will be input to an inversion program which will generate the regional magnetization model. Further, the contribution of the Kentucky body to the satellite altitude magnetic anomaly will be computed and displayed over this grid.

1.3) The regional-scale 1:2,500,000 map mosaic is being digitized using previous magnetization models, the U. S. magnetic anomaly map, and regional tectonic maps as a guide. This will form the basis for the regional magnetization model.

1.4) The work of the contract is proceeding on schedule, with no unforeseen difficulties. In the next quarter we anticipate the completion of the tasks involving the detailed model and considerable progress on those involving the regional models.
### 2.0 FISCAL AND PLANNING DATA

| **Contract Price** |  
| **Prior Expenditure** |  
| **Expenditure This Quarter** |  
| **Total Expenditure To Date** |  
| **Amount Remaining** |  
| **Total Hours Expended** |  
| **Amount Next Quarter (est.)** |  
| **Amount Required to Complete Work** |  
