

TELEMETRY AND CONTROL SYSTEMS FOR THE BALLOON ALTITUDE MOSAICS MEASUREMENTS PROGRAM



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ABSTRACT

The Balloon Altitude Measurements (BAMM) program is being conducted by the Air Force Geophysics Laboratory. This program is designed to provide infrared earth background measurements and atmospheric IR data in the short wave spectrum. The BAMM flight profile calls for approximately 10 hour flights. These high altitude balloon-borne experiments projected several unusual design problems in telemetry, tracking and payload position, data acquisition, and television control and video transmission. The payload may be rigged for aerial recovery by helicopter.

Five telemetry downlinks are required for the scientific, television, and balloon housekeeping data. Three upleg UHF links are used for remote command and control of the balloon vehicle, television system, sensors, and the pointed platform, and for ranging/trajectory data. The innovations and methods used to solve the many instrumentation problems for this exciting and highly successful program are highlighted. To date five successful BAMM balloon flights have been carried out from launch facilities in New Mexico and Mississippi.