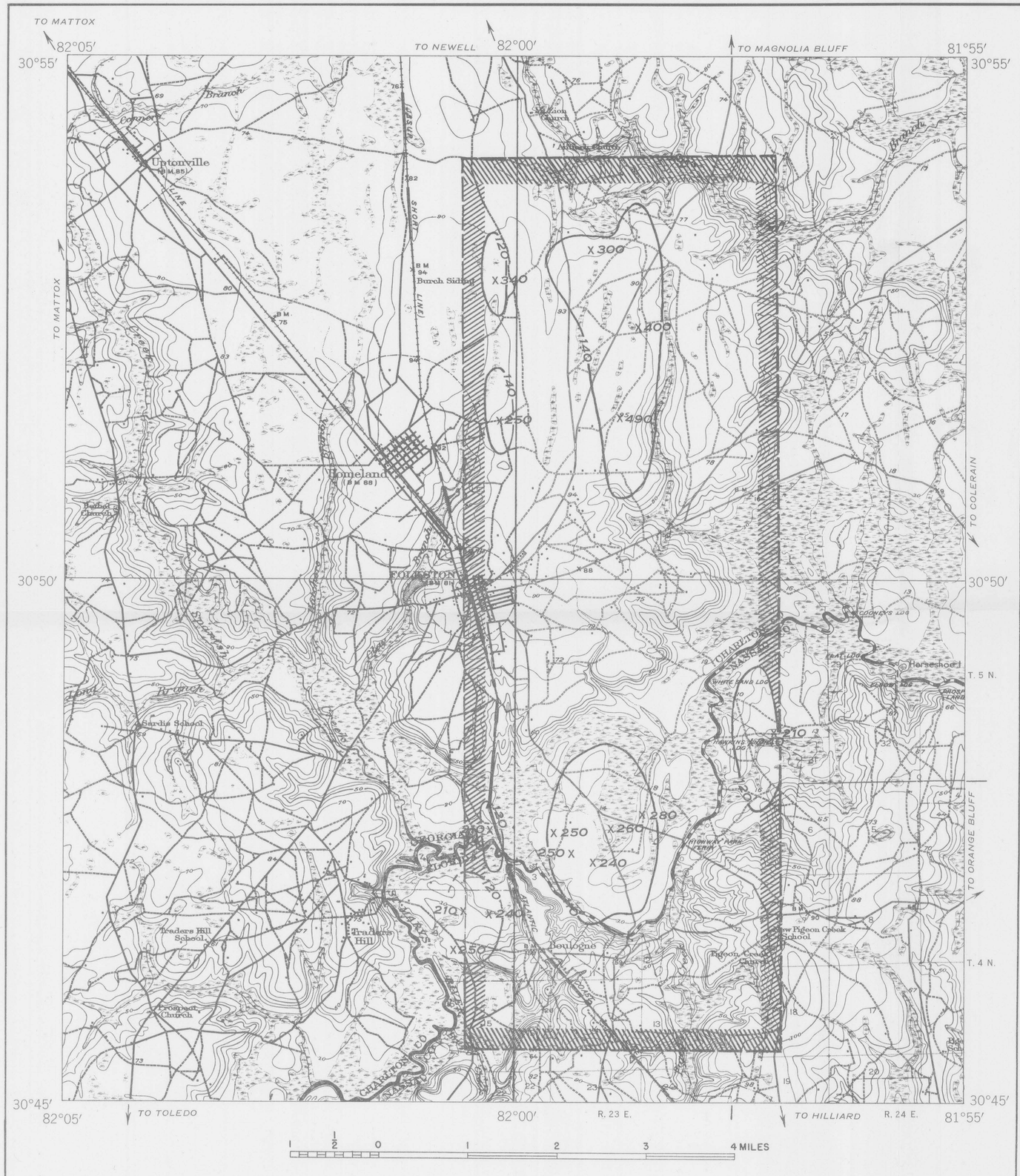
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY
W. E. WRATHER, DIRECTOR

PREPARED IN COOPERATION WITH THE
UNITED STATES ATOMIC ENERGY COMMISSION

GEOPHYSICAL INVESTIGATIONS
MAP GP 119



Base from U. S. Geological Survey quadrangle sheets

Contour interval 10 feet

AIRBORNE RADIOACTIVITY SURVEY IN THE FOLKSTON AREA CHARLTON COUNTY, GEORGIA AND NASSAU COUNTY, FLORIDA

By R. M. Moxham

The accompanying map shows the results of an airborne radioactivity survey of 35 square miles in the Folkston area, Charlton County, Ga., and Nassau County, Fla. The survey was made May 4, 1954, as part of a cooperative program with the U. S. Atomic Energy Commission.

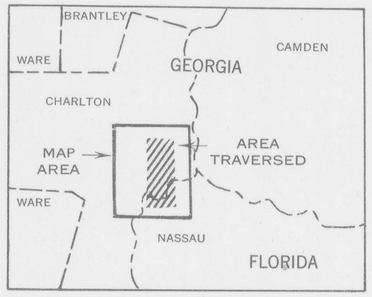
The survey was made with scintillation-detection equipment. Parallel traverse lines, spaced at quarter-mile intervals, were flown approximately 500 feet above the ground at an average air speed of 150 miles per hour. Aerial photographs were used for pilot guidance, and the flight path of the aircraft was recorded by a gyrostabilized, continuous-strip-film camera. The distance of the aircraft from the ground was measured with a continuously recording radio altimeter.

At 500 feet above the ground the width of the zone from which anomalous radioactivity is measured varies with the intensity of radiation of the sources; for strong sources the width is as much as 1,400 feet. Quarter-mile spacing of the flight paths of the aircraft should be adequate to detect anomalies from strong sources of radioactivity. However, small areas of considerable radioactivity midway between flight paths may not be noted.

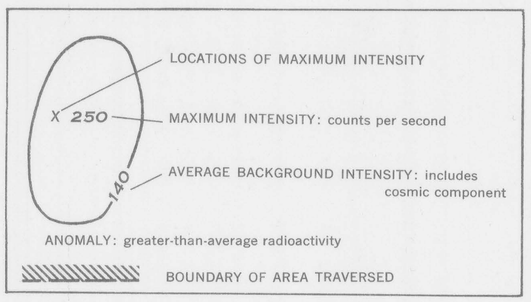
The present technique of airborne radioactivity measurement does not permit distinguishing between activity due to thorium and that due to uranium. An anomaly, therefore, may represent radioactivity due entirely to one or to a combination of these elements. However, it seems likely that the anomalies shown may have resulted in part from deposits of heavy minerals formed along shorelines of the ocean at periods during which the level of the sea stood above its present level. The elevation and general topographic configuration of the anomalous areas northeast of Folkston suggest the presence of heavy mineral deposits associated with or reworked from marine features developed during the retreat of the Wicomico sea. Those anomalies southeast of Folkston are in areas probably underlain by materials deposited by the St. Marys River and its tributaries and are apparently unrelated to the anomalies in the northern part of the surveyed area.

It is not possible to determine the extent or radioactive content of the materials responsible for the abnormal radioactivity. The information given on the accompanying map indicates only those localities of greater-than-average radioactivity and therefore suggest areas in which uranium or thorium deposits are more likely to occur.

APPROXIMATE MEAN DECLINATION, 1954



INDEX MAP SHOWING LOCATION OF AREA TRAVERSED



EXPLANATION

AIRBORNE RADIOACTIVITY SURVEY IN THE FOLKSTON AREA CHARLTON COUNTY, GEORGIA, AND NASSAU COUNTY, FLORIDA

1954

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