

EXPLANATION

- DARKER SHADE OF COLOR INDICATES AREA OF OUTCROP
- CAMBRIAN**
 - Potsdam sandstone
Sandstone, conglomerate, and breccia
 - Medium-grained pink granite gneiss of complex feldspathic composition, with pyroxene, hornblende, and/or biotite, g; mixed rocks and migmatite, gx
 - Medium-grained green quartz syenite gneiss with hornblende and pyroxene
 - Phacoidal-textured granite gneisses. Green low-quartz phase, ps, pink phase with variable quartz content, psc; green high-quartz phase, with pronounced quartz-ribbon texture, psg
 - Amphibolite, mostly metagabbro but in part some amphibolite of sedimentary origin
 - Anorthositic gabbro
 - Metasedimentary rocks
- PRECAMBRIAN**

- Magnetic contours and flight traverse
Contours dashed where data are incomplete; contours show total intensity relative to an arbitrary datum
- Magnetic contour enclosing area of lower magnetic intensity
- Measured maximum or minimum intensity within closed high or closed low
- Contact
Approximately located
- Concealed contact
Location inferred from geology and aeromagnetic data. Letter symbols indicate units separated by the contact
- Concealed probable fault
- Mine or prospect

An aeromagnetic survey of approximately 6,100 square miles in the Adirondack Mountains in northern New York State was made during May and June 1945 and August, September, and October 1946 by the U. S. Geological Survey. The survey was undertaken primarily to guide a program of exploration for magnetite, which was a joint effort by the U. S. Geological Survey, the U. S. Bureau of Mines, and the New York State Science Service. The aeromagnetic data were subsequently compiled as magnetic maps to aid in the long-range geologic studies in this region by the Geological Survey. The geology shown on the map is somewhat generalized from the more complex reality. Pleistocene drift, moraine material, and water-laid gravel and sand blanket much of the area mapped, but some are omitted from the map so that a ready comparison may be made of the aeromagnetic data and the underlying bedrock.

The magnetic measurements were made by a continuously recording AN/ASQ-3A airborne magnetometer installed in an AT-11 airplane. East-west traverse lines in the Chateaugay quadrangle and north-south lines in the Loon Lake quadrangle were flown approximately 1,000 feet above the ground at intervals of a quarter of a mile. Aerial photographs were used for pilot guidance, and the flight path of the aircraft was recorded by intermittent photographs. The distance from plane to ground was measured with a radio altimeter.

Interpretation of the magnetic map requires a great deal of caution, tempered with experience. It must be emphasized that not all the peaks and ridges on the aeromagnetic map indicate buried ore deposits. Most of the highs are produced by minor amounts of disseminated magnetite occurring as an accessory mineral throughout large volumes of country rock. The quantity of disseminated accessory magnetite is often rather uniform for a given rock type, but it may vary considerably from one rock type to another. The presence of disseminated accessory hematite, together with unexpected permanent magnetization effects, further complicates the picture. These features account for most of the anomalies. In addition, certain belts of rock contain disseminated iron oxides in amounts greater than those usually termed "accessory" but significantly less than those required to produce magnetite bodies of commercial interest. Such rock belts yield substantial magnetic anomalies.

The U. S. Geological Survey has made a ground reconnaissance by dip-nettle of all the prominent aeromagnetic anomalies that are considered most likely to indicate ore deposits. This work has been supplemented in places by the U. S. Bureau of Mines and New York State Science Service. Some of the results of the work by the Geological Survey have been published in preliminary form by Hawkes and Balsley (1946) and by Postel (1952).

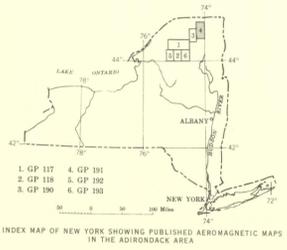
REFERENCES

- Hawkes, H. E., and Balsley, J. R., 1946, Magnetic exploration for iron ore in northern New York: U. S. Geol. Survey Strategic Minerals Inv. Prelim Rept. 3-194, p. 2-4.
- Postel, A. W., 1952, Geology of Clinton County magnetite district, New York: U. S. Geol. Survey Prof. Paper 237.

LIST OF MAGNETITE MINES AND PROSPECTS

- Includes most magnetic anomalies systematically surveyed by dip-nettle by private interests or government agencies.
1. Brewer Hill mine
 2. Briggs prospect
 3. Owls Head mine
 4. Ore bed prospect
 5. Bannerhouse mine

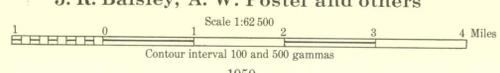
NOTE: Aeromagnetic data are obtained and compiled along a continuous line, whereas ground magnetic surveys are made at separate points. Errors within the normal limits of any magnetic measurement may cause slight discrepancies between flight lines in an aeromagnetic map, which would be more obvious than similar discrepancies between points in a ground magnetic map. For this reason as much care should be exercised in evaluating magnetic features that appear as elongations along a single aeromagnetic traverse as in interpreting an anomaly indicated by a single ground station.



Base from U. S. Geological Survey topographic quadrangle maps

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C., WR 8934

AEROMAGNETIC AND GEOLOGIC MAP OF LOON LAKE QUADRANGLE AND PART OF THE CHATEAUGAY QUADRANGLE, FRANKLIN COUNTY, NEW YORK
By
J. R. Balsley, A. W. Postel and others



Aeromagnetic survey by J. R. Balsley, M. E. Hill, and D. L. Rossman, 1945. Geologic survey: Loon Lake quadrangle by A. W. Postel, C. R. Dods, L. D. Carswell, modified from U. S. Geol. Survey Geol. Quad. GQ 63, 1956; Chateaugay quadrangle by A. E. Nelson, D. R. Wiesnet, L. D. Carswell, and A. W. Postel, modified from U. S. Geol. Survey Misc. Geol. Inv. Map I-168, 1956.