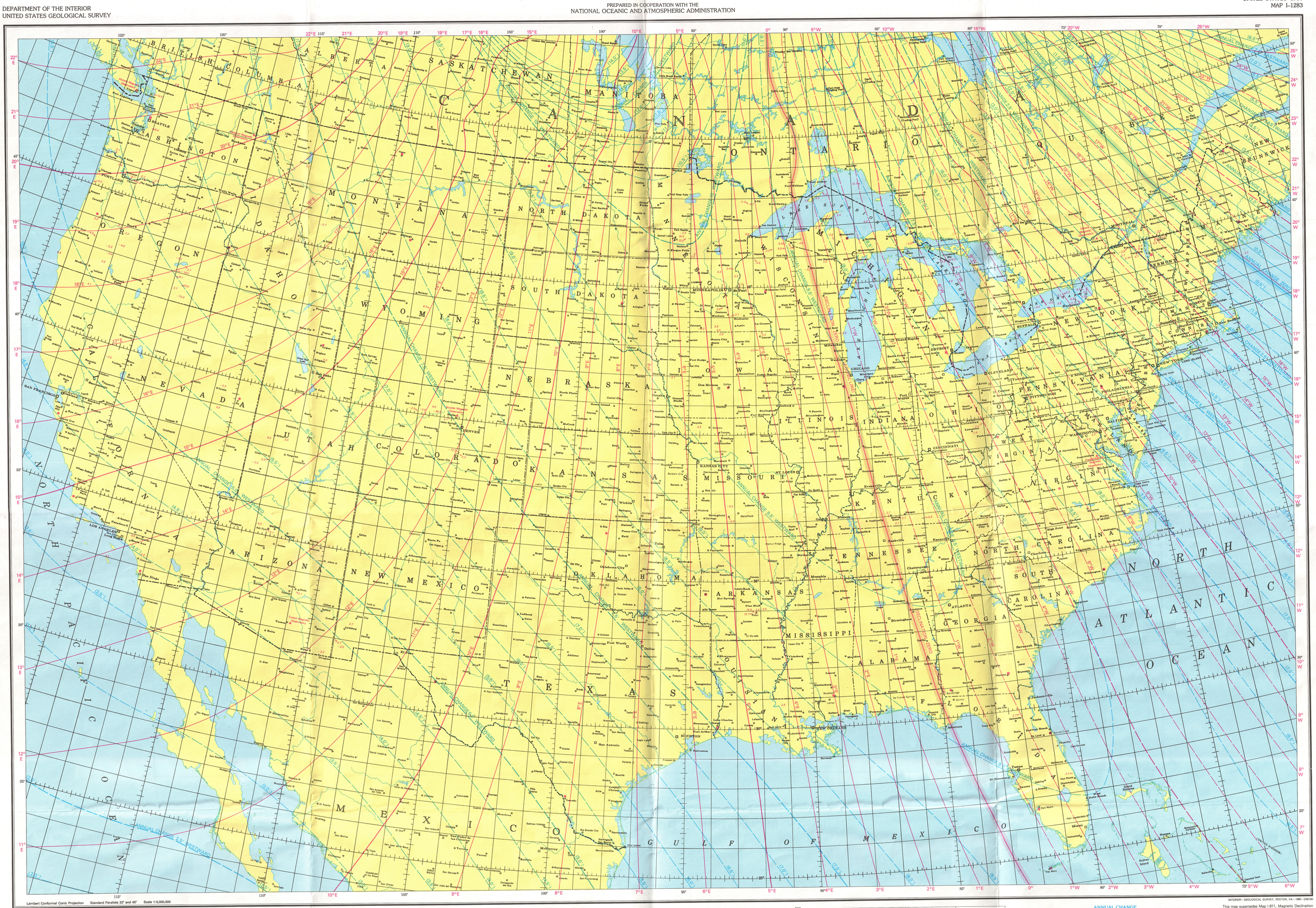
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

MAGNETIC DECLINATION
UNITED STATES–1980
MAP I–1283



Base from Coast and Geodetic Survey, U.S. Department of Commerce, 1965, revised 1970.
The base was modified by the U.S.G.S. in 1980.

Many magnetic observatory and field survey personnel of the U.S. Geological Survey provided the basic data essential for developing this chart. Leonard Ginther assisted with the drafting and preparation of the final manuscripts. William Paddock (NOAA) provided some of the data used in the analysis of declination.

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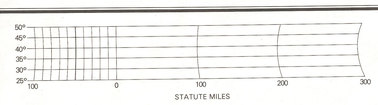
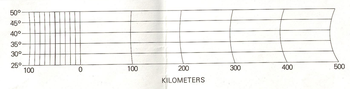
DECLINATION

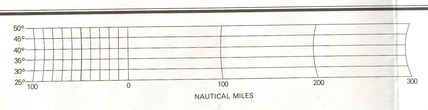
Magnetic declination (also called compass variation) is the angle between true north and the direction in which the magnetic compass points. Its value at the beginning of 1980 is indicated by lines of equal declination (isogonic lines), shown in RED. The lines are solid where the compass points east of true north (east declination), and dashed where it points west of true north (west declination).

The isogonic lines are based on a set of 7th-degree polynomials that were determined by least squares using original measurements of declination.

The italic numbers in RED indicate the locations and magnitudes of known declination anomalies, that is, places where the actual declination differs significantly from declination shown by the isogonic lines. For those places the actual declination can be estimated by taking the algebraic sum of the italicized value and the value determined from the isogonic lines (east declination is considered positive, west declination negative).







MAGNETIC DECLINATION IN THE UNITED STATES—EPOCH 1980

By
E.B. Fabiano and N.W. Peddie

1980

ANNUAL CHANGE

The annual change of magnetic declination at the beginning of 1980 is indicated by lines of equal annual change (isoporic lines), shown in BLUE. The lines are solid where the change is eastward, and dashed where the change is westward.

The isoporic lines are based on a 6th-degree polynomial that was determined by least squares using measurements from magnetic observatories (▲) and more than 50 repeat stations (single repeat stations ● ; twin repeat stations ■). The repeat stations shown represent those occupied during 1978–1979.

INTERIOR—GEOLOGICAL SURVEY, RESTON, VA—1980—GR/760

This map supersedes Map I-911, Magnetic Declination of the United States—Epoch 1975.0, published by the United States Geological Survey 1975

CANADA

The isogonic and isoporic lines for Canada are based, for the most part, on a preliminary version of the 1980 Isogonic Chart of Canada, which was derived by a different kind of analysis. For the area just north of the border with Canada, and extending about one degree of latitude, the isogonic lines and, where feasible, the isoporic lines were adjusted to produce continuity between the two charts. For values in Canada, the 1980 Isogonic Chart of Canada, (published by the Department of Energy, Mines, and Resources, Ottawa, Canada) should be used.

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