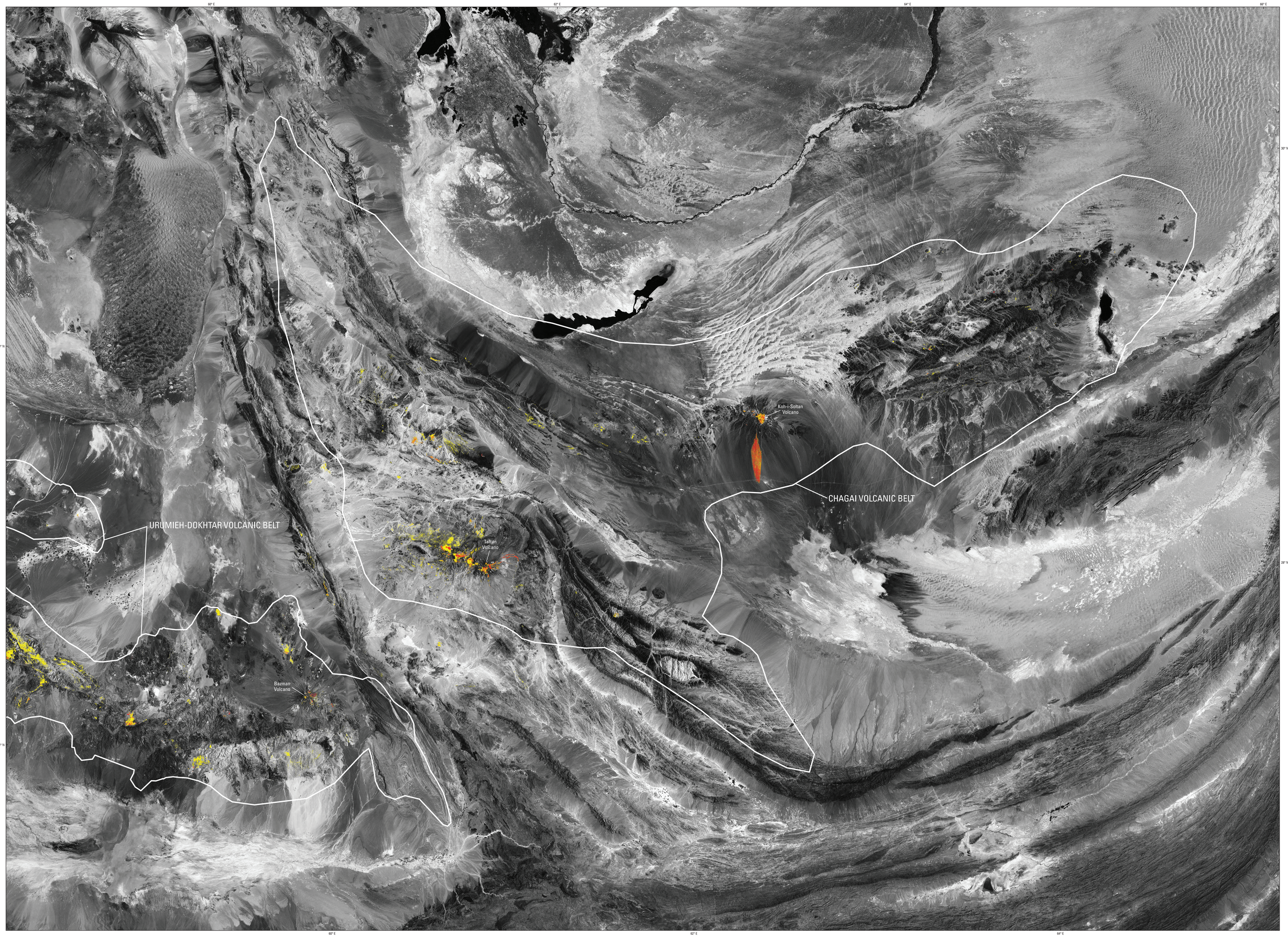
U.S. Department of the Interior
U.S. Geological Survey

Scientific Investigations Report 2010–5090–O
Plate 5 of 10



Base is Landsat Thematic Mapper, band 7 grayscale image (http://landsat.usgs.gov)
Universal Transverse Mercator projection

APPROXIMATE MEAN DECLINATION, 2014

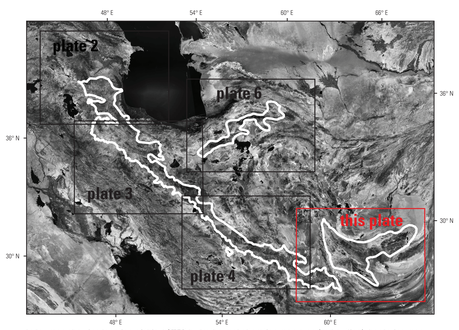
RATIO SCALE 1: 660,000

50 25 0 50 MILES

50 25 0 50 KILOMETERS

NATIONAL GEODETIC VERTICAL DATUM OF 1984

Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) data was used to map hydrothermal alteration, including argillic- and phyllic-altered rocks.



Index map showing location of this ASTER hydrothermal alteration map area (red outline), bordering map areas (black outlines), and volcanic belt boundaries (white outlines).

EXPLANATION

[NOTE FOR PLOT USERS: Small, isolated data areas may be difficult to see on plots; see files for detail (http://pubs.usgs.gov/sir/2010/5090/o/)]

Alteration units, mapped using ASTER data

- Phyllic-altered rocks
- Argillic-altered rocks
- Volcanic belt boundary

ASTER Hydrothermal Alteration Map of the Southeastern Urumieh-Dokhtar and Chagai Volcanic Belts, Southeastern Iran, Southwestern Pakistan, and Southern Afghanistan

By
John C. Mars

2014

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This map was printed on an electronic plotter directly from digital files. Dimensional calibration may vary between electronic plotters and between X and Y directions on the same plotter, and paper may change size due to atmospheric conditions; therefore, scale and proportions may not be true on plots of this map.

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Digital files available at http://pubs.usgs.gov/sir/2010/5090/o/

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This map is part of Professional Paper 1809, Porphyry Copper Assessment of the Urumieh-Dokhtar and Chagai Volcanic Belts and Makran Accretionary Complex Region of Iran and Pakistan. Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) data and Interactive Data Language (IDL) logical operators—A tool for porphyry copper exploration and assessment: U.S. Geological Survey Scientific Investigations Report 2010–5090–O, 36 p., 10 plates, and spatial data, available at http://dx.doi.org/10.3133/sir20105090O