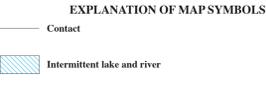


- ### DESCRIPTION OF MAP UNITS
- Q_{2a}** Conglomerate and sandstone (Holocene)—Alluvium: shingly and detrital sediments, gravel, sand more abundant than silt and clay
 - Q_{2b}** Lake deposits (Holocene)—Lake (wet playa) deposit
 - Q_{2c}** Conglomerate and sandstone (Holocene and late Pleistocene)—Alluvium: shingly and detrital sediments, gravel, sand more abundant than silt and clay
 - Q_{2d}** Eolian deposits (Holocene and late Pleistocene)—Sand
 - Q_{1a}** Conglomerate and sandstone (late Pleistocene)—Alluvium: shingly and detrital sediments, gravel, sand more abundant than silt and clay
 - Q_{1b}** Basalt lava (middle Pleistocene)—Basaltic andesite and olivine basalt (Asparan Series)
 - Q_{1c}** Conglomerate and sandstone (middle Pleistocene)—Alluvium: shingly and detrital sediments, gravel, sand more abundant than silt and clay
 - N₂** Sandstone and conglomerate (early Pliocene)—Variegated sandstone, conglomerate more abundant than clay, siltstone
 - P₂sh** Clay and shale (Eocene)—Sandstone, siltstone, conglomerate and gravelstone, felsic and mafic volcanic rocks

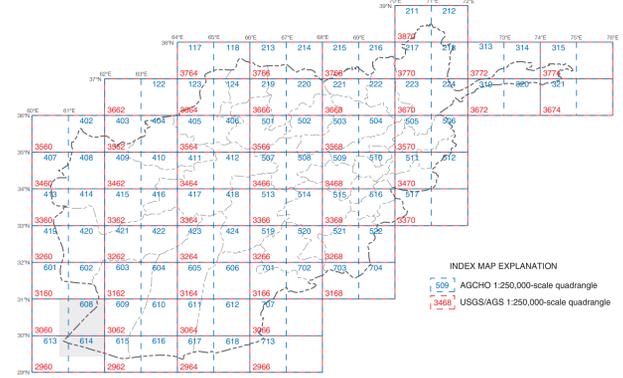


DATA SUMMARY

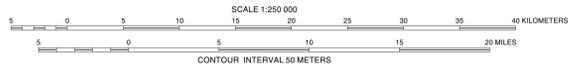
This map was produced from several larger digital datasets. Topography was derived from Shuttle Radar Topography Mission (SRTM) 85-meter digital data. Gaps in the original dataset were filled with data digitized from contours on 1:200,000-scale Soviet General Staff Sheets (1978–1997). Contours were generated by cubic convolution averaged over four pixels using TNTmips' surface-modeling capabilities. Cultural data were extracted from files downloaded from the Afghanistan Information Management Service (AIMS) Web site (<http://www.aims.org.af>). The AIMS files were originally derived from maps produced by the Afghanistan Geodesy and Cartography Head Office (AGCHO). Geologic data and the international boundary of Afghanistan were taken directly from Abdullah and Chmyriov (1977). It is the primary intent of the U.S. Geological Survey (USGS) to present the geologic data in a useful format while making them publicly available. These data represent the state of geologic mapping in Afghanistan as of 2005, although the original map was released in the late 1970s (Abdullah and Chmyriov, 1977). The USGS has made no attempt to modify original geologic map-unit boundaries and faults; however, modifications to map-unit symbology, and minor modifications to map-unit descriptions, have been made to clarify lithostratigraphy and to modernize terminology. The generation of a Correlation of Map Units (CMU) diagram required interpretation of the original data, because no CMU diagram was presented by Abdullah and Chmyriov (1977). This map is part of a series that includes a geologic map, a topographic map, a Landsat natural-color image map, and a Landsat false-color image map for the USGS/AGS (Afghan Geological Survey) quadrangles shown on the index map. The maps for any given quadrangle have the same open-file number but a different letter suffix, namely, A, B, C, and D for the geologic, topographic, Landsat natural-color, and Landsat false-color maps, respectively. The present map series is to be followed by a second series, in which the geology is reinterpreted on the basis of analysis of remote-sensing data, limited fieldwork, and library research. The second series is to be produced by the USGS in cooperation with the AGS and AGCHO.

REFERENCE CITED

Abdullah, Sh., and Chmyriov, V.M., eds., 1977, Map of mineral resources of Afghanistan: Kabul, Ministry of Mines and Industries of the Democratic Republic of Afghanistan, Department of Geological and Mineral Survey, V/O "Technoexport" USSR, scale 1:500,000.
*Geoplot analysis software developed by MicroImages, Inc., Lincoln, NE 68508-2010.



Base from Shuttle Radar Topography Mission (SRTM) 85-meter digital data
Cultural data from digital files from AIMS Web site (<http://www.aims.org.af>)
Projection: Universal Transverse Mercator, zone 41, WGS 84 Datum



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GEOLOGIC MAP OF QUADRANGLES 3060 AND 2960, QALA-I-FATH (608), MALEK-SAYH-KOH (613), AND GOZAR-E-SAH (614) QUADRANGLES, AFGHANISTAN

Compiled by
Dennis W. O'Leary, John W. Whitney, and Robert G. Bohannon
2005

