

- DESCRIPTION OF MAP UNITS**
- Q_{al}** Conglomerate and sandstone (Holocene)—Alluvium: shingly and detrital sediments, gravel, sand more abundant than silt and clay
 - Q_{alac}** Fan alluvium and colluvium (Holocene and late Pleistocene)—Fan alluvium and colluvium: shingly and detrital sediments, gravel, sand, clay
 - Q_{al}** Conglomerate and sandstone (late Pleistocene)—Alluvium: shingly and detrital sediments, gravel, sand more abundant than silt and clay
 - Q_{lo}** Loess (late Pleistocene)—Loess more abundant than sand, clay
 - Q_{al}** Conglomerate and sandstone (middle Pleistocene)—Alluvium: shingly and detrital sediments, gravel, sand more abundant than silt and clay
 - N₂sp** Conglomerate and sandstone (Pliocene)—Gray conglomerate, grit, sandstone more abundant than siltstone, clay, limestone, marl, gypsum, salt; acid to mafic volcanic rocks
 - K_{md}** Andesite and diorite (Miocene)—Andesite, diorite more abundant than diabase porphyry dikes (and veins)
 - P₂gr** Granite and granodiorite (Oligocene)—Granite, granite porphyry, granodiorite more abundant than quartz syenite, granosyenite
 - P₂sl** Sandstone and siltstone (Oligocene)—Sandstone, siltstone more abundant than clay, conglomerate, limestone, marl; acid and mafic volcanic rocks
 - P₂rd** Rhyolite and dacite (Oligocene and Eocene)—Rhyolite (triarite), dacite more abundant than granite porphyry
 - P₂bab** Basaltic andesite and basalt (Oligocene and Eocene)—Basaltic andesite, basalt more abundant than trachyte, dacite, rhyolite, ignimbrite, tuff; conglomerate, sandstone, siltstone, limestone
 - P₂rl** Rhyolite lava (Oligocene and Eocene)—Rhyolite lava more abundant than basaltic andesite, basalt, trachyte, dacite, rhyolite, ignimbrite, tuff; conglomerate, sandstone, siltstone, limestone
 - P₂vl** Lava (Oligocene and Eocene)—Basaltic andesite, basalt, trachyte, dacite, rhyolite, ignimbrite, tuff; conglomerate, sandstone, siltstone, limestone
 - K_{gd}** Gabbro and diorite (Early Cretaceous)—Gabbro, diorite more abundant than plagiogranite
 - K₁sls** Limestone and sandstone (Early Cretaceous (Albian and Aptian))—Limestone, marl, sandstone more abundant than conglomerate
 - K₁sls** Limestone and sandstone (Early Cretaceous (Aptian and Berriasian))—Limestone, marl, sandstone more abundant than conglomerate
 - K₁sl** Sandstone and siltstone (Early Cretaceous (Hauterivian and Valanginian))—Sandstone, siltstone more abundant than limestone, marl
 - K₁sl** Sandstone and siltstone (Early Cretaceous (Valanginian and Berriasian))—Sandstone, siltstone more abundant than limestone, marl

- K₁sl** Andesite lava (Early Cretaceous (Valanginian and Berriasian))—Andesite lava more abundant than sandstone, siltstone, limestone, marl
- K₁sl** Basalt lava (Early Cretaceous (Valanginian and Berriasian))—Basalt lava more abundant than sandstone, siltstone, limestone, marl
- J₁sh** Shale and siltstone (Early Cretaceous (Hauterivian) to Late Jurassic (Tithonian))—Shale more abundant than siltstone, sandstone, conglomerate, chert, limestone, greenstone, acid and mafic volcanic rocks
- J₁sl** Basalt lava (Early Cretaceous (Hauterivian) to Late Jurassic (Tithonian))—Basalt lava more abundant than shale, siltstone, sandstone, conglomerate, chert, limestone, greenstone, acid volcanic rocks

- EXPLANATION OF MAP SYMBOLS**
- Contact**—Solid line
 - Fault**—Dashed where approximately located; dotted where concealed

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 TINtaps' 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).

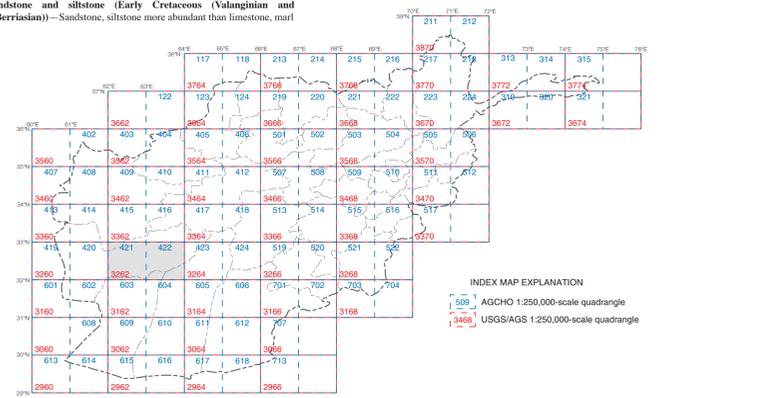
It is the primary intent of the U.S. Geological Survey (USGS) to present the geologic data in a useful format while making them publicly available. These data represent the state of geologic mapping in Afghanistan as of 2005, although the original map was released in the late 1970s (Abdullah and Chmyriov, 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.

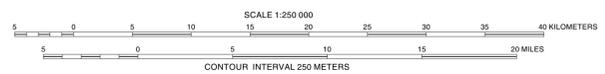
REFERENCE CITED

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.

Geospatial analysis software developed by MicroImages, Inc., Lincoln, NE 68508-2100.



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 QUADRANGLE 3262, FARAH (421) AND HOKUMAT-E-PUR-CHAMAN (422) QUADRANGLES, AFGHANISTAN

Compiled by
David J. Lidke
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