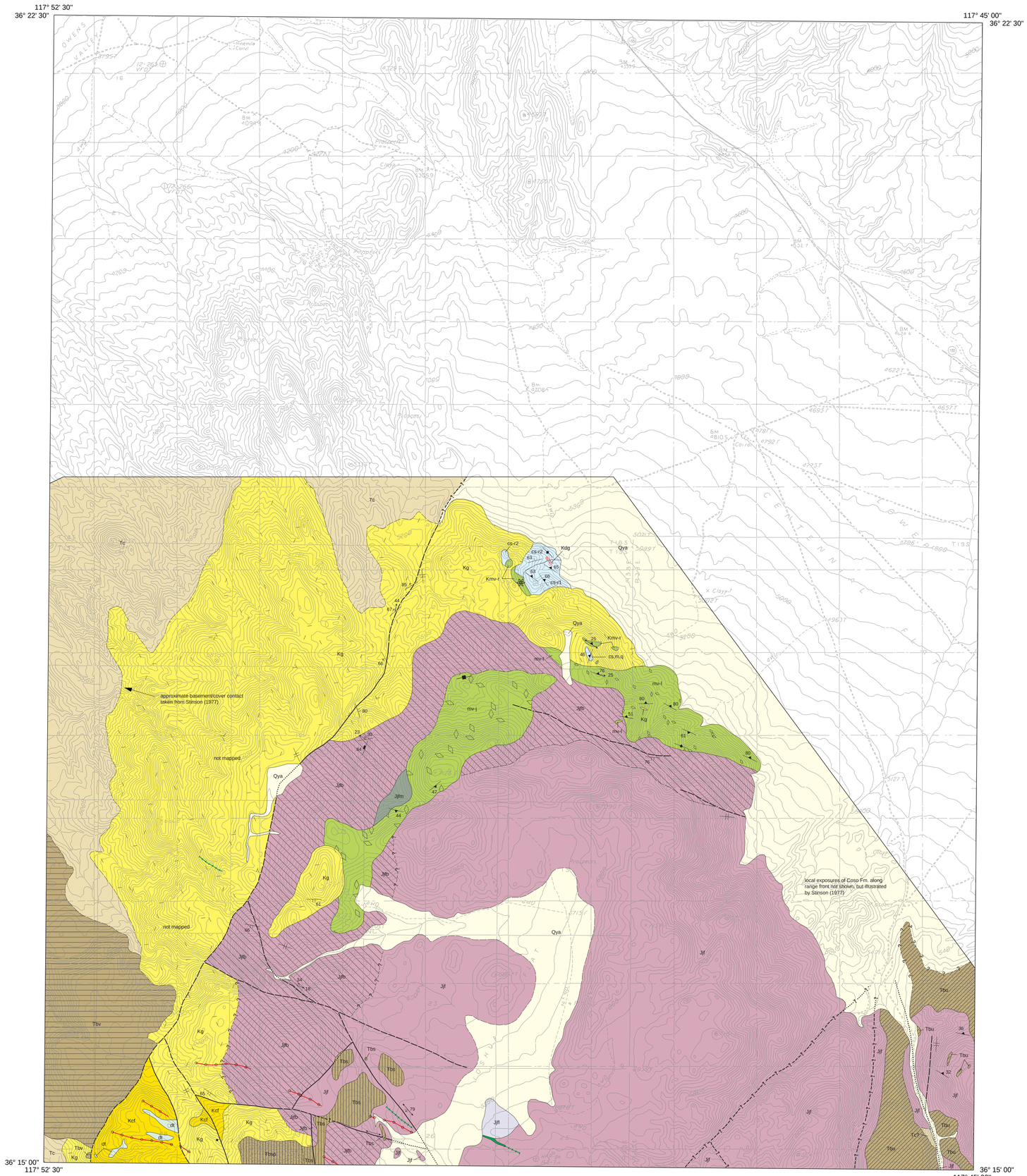
Centennial Canyon Quadrangle



GEOLOGIC MAP OF THE CENTENNIAL CANYON 7.5' QUADRANGLE; INYO COUNTY, CALIFORNIA

Compilation by Richard S. Whitmarsh
1997

EXPLANATION†

COVER UNITS

- Quaternary
  - Qya — Younger Alluvium*
- Tertiary
  - Tbsp — Basalt of Silver Mountain, pyroclastic*
  - Tbs — Basalt of Silver Mountain*
  - Tbv — Basalt of Vermillion Canyon
  - Tc — Coso Formation, fanglomerate*
  - Tbu — Basalt of Upper Centennial Flat*

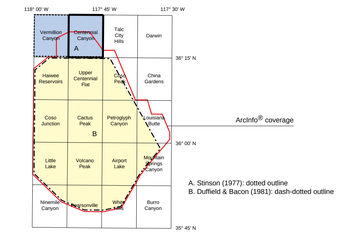
BASEMENT UNITS

- Cretaceous
  - Kdc — Coso Dike Swarm (Alkali-feldspar Granite) [88.3±0.1 Ma]
  - Kcf — Leucogranite of Cactus Flats (Alkali-feldpar Granite) [102±4 Ma]
  - Kdg — Granitic Dikes
  - Kg — Undifferentiated Granitoid Rocks
  - dt — Diorite of Uncertain Affinity
  - Kmv-r — Metavolcanic Rocks of the Rugged Rock Pendant [111±2 Ma]
  - JKdi — Independence Dike Swarm (red: felsic, green: mafic–intermediate) [166±1 to ~119 Ma]
- Jurassic
  - Jjfl — Joshua Flat Pluton, leucocratic component (Alkali-feldspar Granite)
  - Jjfm — Joshua Flat Pluton, mafic component (Hornblende Gabbro)
  - Jjfb — Joshua Flat Pluton, border facies (Quartz Monzonite) to (Granite)
  - Jjf — Joshua Flat Pluton (Quartz Monzonite) to (Granite)
- Pz–Mz
  - mv-l — Metavolcanic Rocks of Lower Centennial Flat; felsic, porphyritic
  - mv-j — Metavolcanic Rocks of Joshua Flat; felsic–intermediate, porphyritic and pyroclastic
  - cs, etc. — Metamorphic Rocks of Uncertain Age (see Chapter One for details)

MAP SYMBOLS

- Boundary of Quaternary rhyolite within coeval pyroclastic deposits; tick marks face toward eruptive center
- Boundary of probable landslide; tick marks localized along base of slide block and face toward structural top
- Approximate structural limit of tectonic breccia; tick marks localized along brecciated side of contact
- Fault contact; solid (known), dashed (approximate), dotted (inferred), queried where conjectural. Ball and bar on down-dropped side of normal fault. Teeth on upper plate of thrust fault.
- Ductile shear (mylonite) zone
- Intrusive or depositional contact; solid (known), dashed (approximate), short dash with query (inferred)
- Fold axis; syncline, anticline, doubly-plunging syncline
- Strike and dip of bedding plane; inclined
- Strike and dip of flow foliation; inclined, vertical
- Strike and dip of fault plane; inclined, w/ down-dip lineation, w/ horizontal lineation, w/ oblique lineation, subhorizontal lineation
- Strike and dip of fracture cleavage; inclined, vertical
- Strike and dip of joint plane; inclined, vertical
- Strike and dip of foliation/compositional layering; inclined, vertical, w/ down-dip lineation, w/ horizontal lineation, w/ oblique lineation
- Locality of sample used for radiometric age determination.

† Units listed represent only the geologic column for this quadrangle. The geologic column for the entire Coso Range, including description of the radiometric ages cited here, is listed within the text file on this CD. Units highlighted with an asterisk (*) were defined and described by Duffield & Bacon (1981). Map symbols shown represent the complete set of symbols used in this study. Some of those illustrated may not be relevant to the geology of this particular quadrangle.



A. Stinson (1977): dotted outline
B. Duffield & Bacon (1981): dash-dotted outline

Reference map with 7.5 minute quadrangle boundaries. Red line delineates boundary of ArcInfo® coverage compiled by Whitmarsh during 1994-1997 at the University of Kansas: Department of Geology: Structural geology and GIS laboratory. Shaded areas (A and B) encompass portions of earlier geological maps containing contacts that have been included in this compilation. Bold black line highlights the locality and boundary of this quadrangle.

SCALE 1:24,000
CONTOUR INTERVAL 40 FEET

0 1 2 3
Kilometers

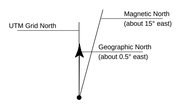
0 1 2
Miles

Total map area of Whitmarsh (see reference map) includes some contacts and unit labels established by Stinson (1977) and Duffield & Bacon (1981). Contacts within the Cenozoic cover sequence either copied or adapted from Duffield & Bacon (1981). Structural data and contacts within the pre-Cenozoic basement complex, except within unit Mzb, established by Whitmarsh 1994-1996.

References Cited:

Duffield, W.A. and Bacon, C.R. 1981. Geologic map of the Coso volcanic field and adjacent areas, Inyo County, California. U.S.G.S., Miscellaneous Investigations Series, Map I-1200.

Stinson, M.C. 1977. Geologic map and sections of the Keeler 15-minute quadrangle, Inyo County, California. California Division of Mines and Geology, Map Sheet 38.



Topographic base: CENTENNIAL CANYON 7.5' QUADRANGLE (USGS, PROVISIONAL EDITION 1987)