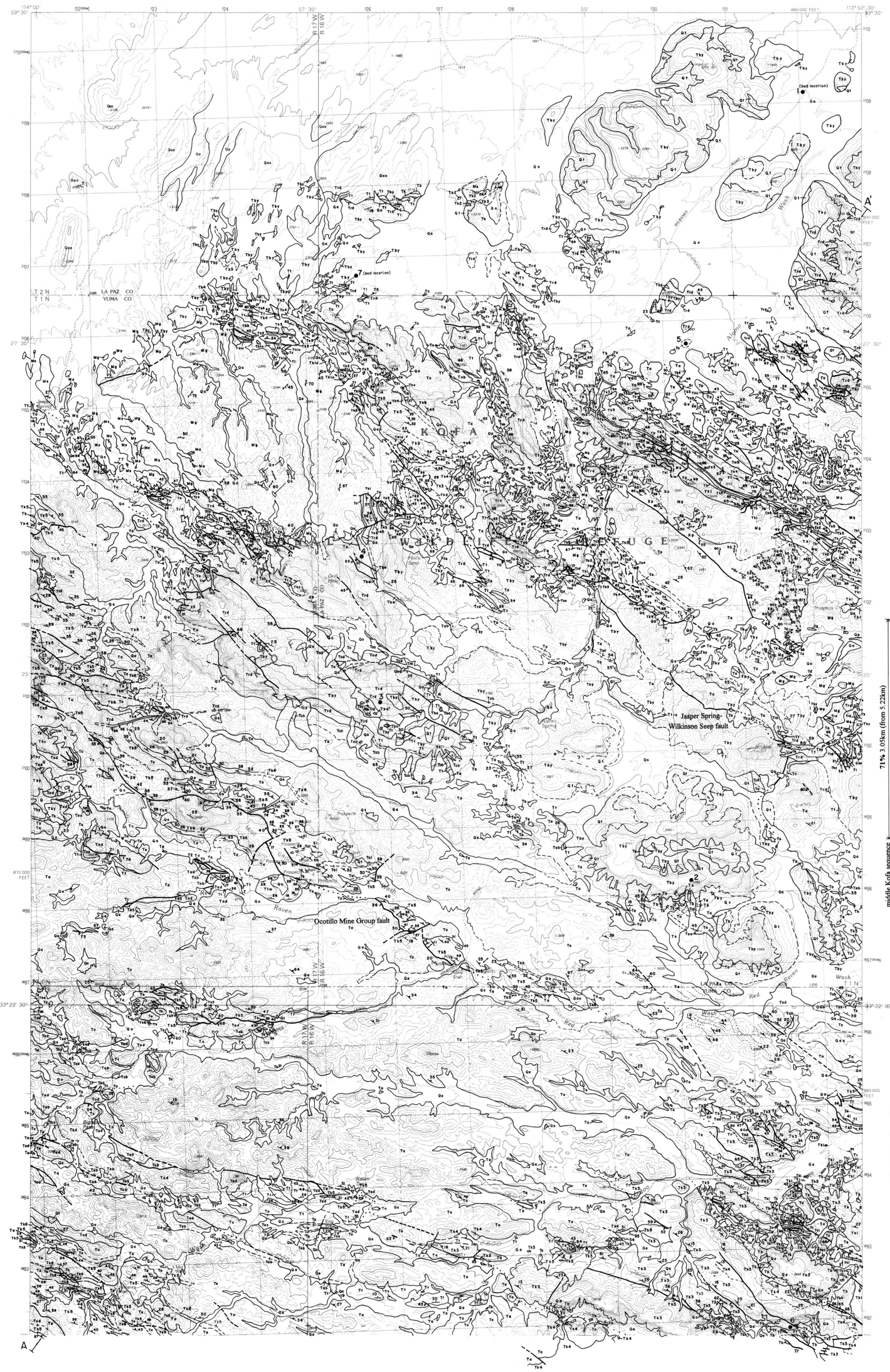
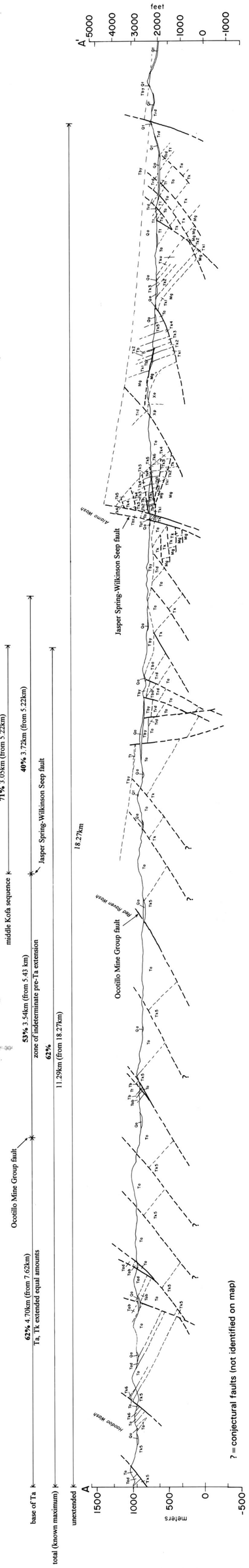
Geology of the northern Kofa Mountains (Owl Head and northern third of the Kofa Butte 7.5' quadrangles), La Paz and Yuma Counties Arizona

by Charles A. Ferguson and Steven J. Skotnicki

Arizona Geological Survey
Open-File Report 96-3, sheet 1 of 1, with text





EXPLANATION

Quaternary

- Qa alluvium
- Qt talus
- Qao older alluvium

Tertiary

- Ttm maar tuff
- Tby younger basalt lava
- Tbi gabbroic sill
- Tba basaltic andesite lava
- Trd rhyodacite lava
- Ta unit of Red Raven Wash
  - Tai intrusive andesite
  - Tab basaltic lava
  - Tad dacitic lava
  - Tat bedded tuff
  - Tas sandstone
- Td dacite porphyry
- Tf felsic lava
- Tb older basalt lavas
- Tt generic unwelded tuff, typically bedded
- Ts generic volcaniclastic rocks

- Tk Kofa sequence, undifferentiated (paleomagnetic polarity)
  - Tku upper Kofa sequence (younger than Tk3)
  - Tk6 tuff of Wilbanks Cabin (+)
  - Tk5 tuff of Ten Ewe Mountain (+)
  - Tk4 tuff of Yaqui Tanks (-)
  - Tk3 tuff of Hoodoo Well (-)
  - Tk2 tuff of White Tanks (-)
  - Tklu upper tuff of Owl Head (-)
  - Tkl tuff of Owl Head (+)

Mesozoic

- Ms low-grade metasedimentary rocks, predominantly argillaceous
- Ma non-foliated amphibolite dikes
- Mg granitoid, intermediate to felsic composition

Proterozoic

- Xo banded orthogneiss
- Xp banded paragneiss
- Xq quartzite

SYMBOLS

Dikes

- mafic
- felsic
- intermediate

Contacts, dashed where approximate, dotted where concealed

- depositional or intrusive
- fault, ball on downthrown block

Strike and dip of planar elements

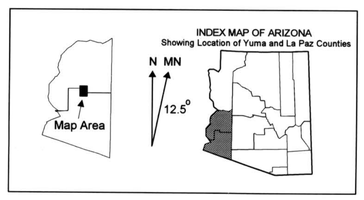
- 36 depositional or intrusive contact
- 69 dike
- 73 fault contact
- 41 bedding
- 57 eutaxitic foliation (welded tuffs)
- 65 flow-banding (lavas)
- 29 tectonic-metamorphic foliation (gneisses and granitiods)

Linear elements

- trend of lineated pumice in welded tuffs
- 51 59 trend and plunge of crenulations, or fold hinges in metamorphic rocks.
- 47 41 trend and plunge of slickenlines on fault surfaces (plunge value not always shown)

● Radiometric dates, listed in order of increasing stratigraphic age. Numbers 1 and 2 are from the same map unit, as are numbers 3 and 4.

1) 18.31 ± 0.42 Ma, K-Ar whole rock (Shafiqullah and others, 1980)
2) 19.9 ± 0.4 Ma, K-Ar whole rock (Bagby and others, 1987)
3) 20.4 ± 0.4 Ma, K-Ar sanidine (Bagby and others, 1987)
4) 22.42 ± 0.13 Ma, $^{40}Ar/^{39}Ar$ sanidine (this report, courtesy of W. C. McIntosh)
5) 21.68 ± 0.57 Ma, K-Ar whole-rock (Shafiqullah and others, 1980)
6) 22.3 ± 0.4 Ma, K-Ar sanidine (Bagby and others, 1987)
7) 23.60 ± 0.62 Ma, K-Ar biotite (Shafiqullah and others, 1980)



SCALE 1:24,000

1 .5 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

TOPOGRAPHIC CONTOUR INTERVAL 40 FEET

jointly funded by the Arizona Geological Survey and the U. S. Geological Survey STATEMAP Program contract # 1434-93-A-1144

Arizona Geological Survey
Open-File Report 96-3, sheet 1 of 1, with text