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Quaternary Fault and Fold Database of the United States

As of January 12, 2017, the USGS maintains a limited number of metadata fields that characterize the Quaternary faults and folds of the United States. For the most up-to-date information, please refer to the interactive fault map.

Campbell Francis fault zone (Class A) No. 959

Last Review Date: 1997-01-06

Compiled in cooperation with the Arizona Geological Survey

citation for this record: **Pearthree, P.A., compiler, 1997, Fault number 959, Campbell Francis fault zone, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, https://earthquakes.usgs.gov/hazards/qfaults, accessed 12/14/2020 03:13 PM.**

Synopsis	A series of north-trending faults with both down to the east and west displacement cut Paleozoic and Mesozoic bedrock and lower and middle Pleistocene basalt flows. A middle Pleistocene basalt flow surface is vertically displace about 5 m. Although there has been little field examination of these faults, the sharp expression of some of the fault scarps on aerial photos suggests that this fault ruptured fairly recently, perhaps during the late Pleistocene.
Name comments	Mapped and included with a number of other fault zones as the Campbell Francis faults by Menges and Pearthree (1983 #2073), but separated from other Campbell Francis faults by Pearthree and others (1996 #2153). The geology of the area was mapped by

	Ulrich and Bailey (1987 #2156).
County(s) and State(s)	COCONINO COUNTY, ARIZONA
Physiographic province(s)	COLORADO PLATEAUS
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Trace mapped at 1:50,000 scale, transferred to 1:250,000-scale topographic base map.
Geologic setting	Located near the northern margin of the Pliocene-Quaternary San Francisco volcanic field, on the erosion surface cut across Paleozoic and Mesozoic rocks that slopes from the Mogollon Rim northeast to the Little Colorado River. The faults cut Mesozoic and Paleozoic rocks, and lower and middle Pleistocene basalt flows.
Length (km)	10 km.
Average strike	N8°E
Sense of movement	Normal *Comments:* Predominantly normal movement inferred from topographic relations.
Dip Direction	W; E
Paleoseismology studies	
Geomorphic expression	The faults form a series of several-meter-high scarps on middle and lower Pleistocene basalt flows; scarps on Paleozoic bedrock are as much as about 15 m high. Scarps bound several weakly defined, shallow physiographic troughs. Little field data has been collected on these scarps, but some of them appear quite sharp on aerial photos, suggesting a fairly recent rupture event.
Age of faulted surficial deposits	Paleozoic, early Pleistocene, middle Pleistocene
Historic	

earthquake	
Most recent prehistoric deformation	middle and late Quaternary (<750 ka) *Comments:* A middle Pleistocene basalt flow is faulted. The sharp appearance of some scarps on aerial photos suggests possible late Pleistocene or younger rupture, but no field evidence has been collected to substantiate this inference.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* Middle Pleistocene basalt flow is displaced about 5 m, which yields a low long-term slip rate.
Date and Compiler(s)	1997 Philip A. Pearthree, Arizona Geological Survey
References	#2073 Menges, C.M., and Pearthree, P.A., 1983, Map of neotectonic (latest Pliocene-Quaternary) deformation in Arizona: Arizona Geological Survey Open-File Report 83-22, 48 p., scale 1:500,000. #2153 Pearthree, P.A., Vincent, K.R., Brazier, R., and Hendricks, D.M., 1996, Plio-Quaternary faulting and seismic hazard in the Flagstaff area, northern Arizona: Arizona Geological Survey Bulletin 200, 40 p., 2 pls. #2156 Ulrich, G.E., and Bailey, N.G., 1987, Geologic map of the SP Mountain part of the San Francisco volcanic field, north-central Arizona: U.S. Geological Survey Miscellaneous Field Studies Map MF-1956, 2 sheets, scale 1:50,000.

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