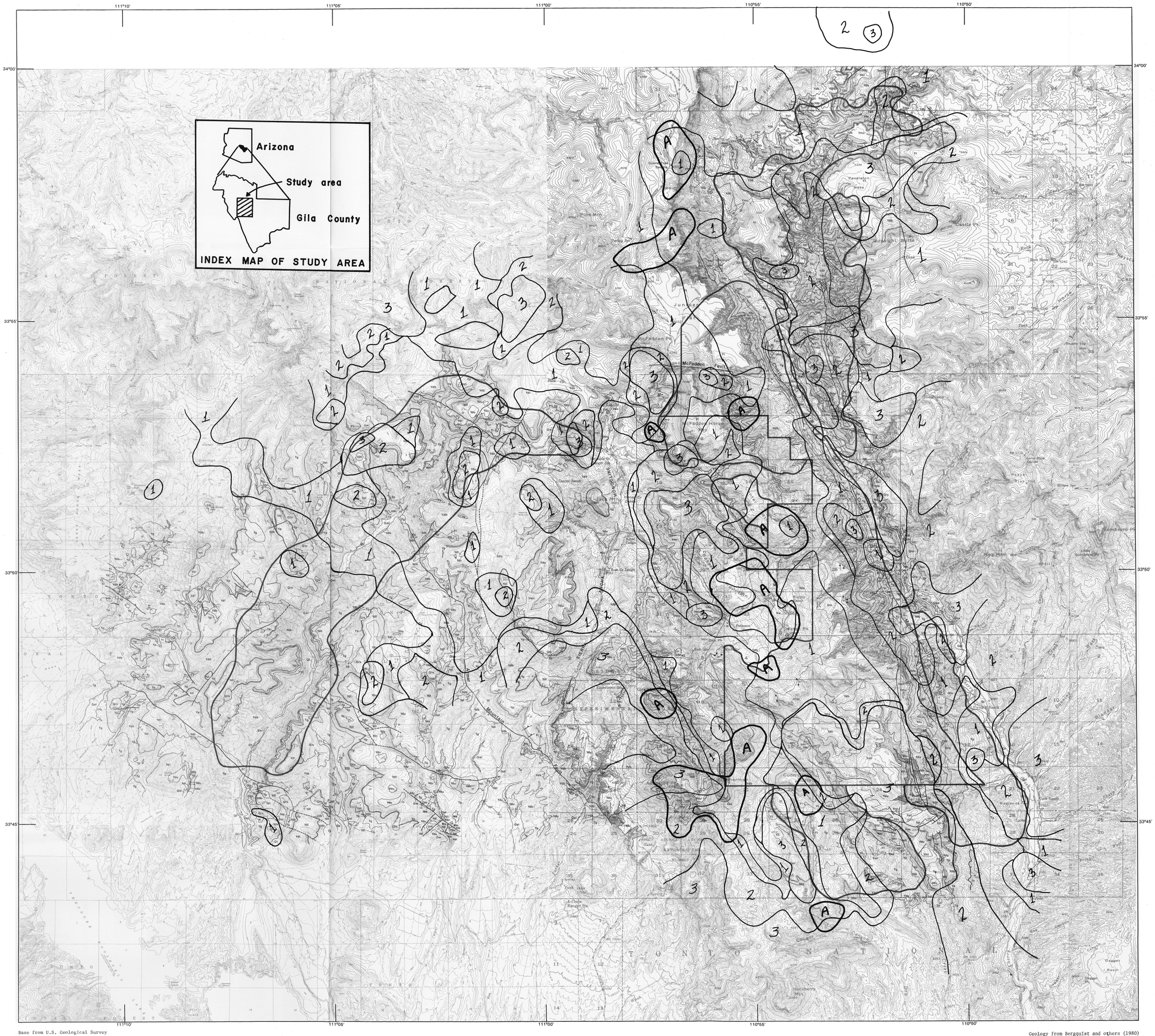
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS FIELD STUDIES
MAP MF-1162-F
SIERRA ANCHA WILDERNESS, ARIZONA



CORRELATION OF MAP UNITS

Qal, Qoa	Qls	Qt, Qp	QUATERNARY
Unconformity			
	Tg		
Unconformity			TERTIARY
	Tt	Miocene	
Unconformity			
	Me		MISSISSIPPIAN
Unconformity			
	Dm		DEVONIAN
Unconformity			
	€s		CAMBRIAN(?)
Unconformity			
	Ydb		
	Yt		
Unconformity			
Apache Group	Ymu		PROTEROZOIC Y
	Yml		
Unconformity			
	Ydu		
	Ydl		
Unconformity			
	Yp		
Nonconformity			
	Yr		

DESCRIPTION OF MAP UNITS

Qal ALLUVIUM--Unconsolidated poorly sorted gravel, sand, and silt in stream channels and arroyos

Qls LANDSLIDE DEPOSITS--Broken and disoriented rock masses and debris flows that generally occur where diabase has been eroded along cliffs and steep slopes beneath Proterozoic sedimentary formations

Qoa OLDER ALLUVIUM--Unconsolidated deeply dissected pebbly to bouldery alluvium along stream channels and locally as surficial deposits as much as 40 m topographically higher than adjacent stream bottoms

Qt TERRACE DEPOSITS--Unconsolidated to weakly consolidated gravel, sand, and silt in terraces along Salome Creek and Cherry Creek

Qp PEDIMENT GRAVEL--Veneer of unconsolidated to weakly consolidated poorly sorted gravel 3-5-m-thick capping pediment surfaces

Tg GRAVEL--Unconsolidated to moderately consolidated sand interbedded with poorly sorted gravel containing angular to well-rounded pebble- to boulder-size clasts of older units. Maximum thickness 200 m

Tt TUFF--White weakly indurated ash-fall tuff containing scattered fragments of moderately welded tuff. A K-Ar age of 15.4±1.5 m.y. (biotite) (C. H. McKee, written commun., 1979) was obtained from a sample of crystal tuff from which lithic fragments had been removed. Sample collected 1 km east of Dutchwoman Butte

Ss ESCABROSA LIMESTONE (Mississippian)--Bluish-gray fine-grained thick-bedded fossiliferous limestone. Exposed thickness about 20 m

Dm MARTIN FORMATION (Devonian)--Gray, light-brown, and reddish-brown fine-grained partly sandy dolomite

€s SANDSTONE--Light-gray medium- to coarse-grained poorly sorted moderately well indurated well-bedded sandstone about 20 m thick overlying brown to reddish-brown poorly sorted laminated to thick-bedded weakly indurated crossbedded arkosic sandstone and siltstone containing subordinate conglomerate beds 2-5 m thick in section about 60 m thick. Unit fills channel. Age based on stratigraphic position and lithology. May be lateral equivalent of Tapeats Sandstone

Ydb DIABASE--Dark-green to black olivine-diabase in sills as much as 350 m thick. Includes some gray to pinkish-gray feldspathic to granophyric differentiates

Yt TROY QUARTZITE (Proterozoic Y)--Brownish- to pinkish-gray and light-gray crossbedded fine- to medium-grained arkose; whitish friable to firmly cemented poorly sorted pebbly sandstone and light-gray to white medium- to coarse-grained well-sorted crossbedded quartzite. Maximum exposed thickness 360 m

APACHE GROUP (Proterozoic Y)--Consists of:

MESCAL LIMESTONE--Divided into:

Ymu Upper part--Upper black, gray, or brown argillite and local basalt--the argillite member of Shride (1967)--and lower red-brown cherty dolomite and stromatolitic dolomite--the algal member of Shride (1967). Most dolomite in the unit was metamorphosed by diabase (unit Ydb) to gray calc-silicate-bearing limestone. An aerport, unit includes a dark-brown-weathering, widely distributed, unnamed basalt that occurs above the argillite member and is not part of the Mescal Limestone. Thickness 55-85 m

Yml Lower part--Reddish-brown cherty sandy thin bedded dolomite--the lower member of Shride (1967). In most places unit is metamorphosed by diabase (unit Ydb) to gray calc-silicate-bearing limestone. Basal 3-30 m is breccia of carbonate rock 5-30 m thick. Unit is host for deposits of asbestos. Thickness 60-85 m

DRIPPING SPRING QUARTZITE--Divided into:

Ydu Upper part--Gray to orange-gray and black thin-bedded commonly pyritic platy siltstone and arkosic sandstone--the siltstone member of Shride (1967). Containing abundant stylolites, mud cracks, and scour-and-fill structures. Siltstone is host for uranium deposits. Thickness 75-120 m

Ydl Lower part--Orange-gray thick-bedded cliff-forming crossbedded arkose--the arkose member of Shride (1967)--and, at the base, the Barnes Conglomerate Member that consists of well-rounded pebbles and cobbles of quartz and quartzite. Thickness 85-110 m

Yp PIONEER FORMATION--Dark-gray to pinkish-dark-gray locally crossbedded arkose and feldspathic sandstone and maroon to brown fissile tuffaceous siltstone that typically contains bleached ovoids 2-20 mm in diameter. At the base, the Scanlan Conglomerate Member consists of pebbles and cobbles of well-rounded gray, white, or vitreous quartzite in an unsorted arkosic matrix derived from the underlying granite. Thickness 30-85 m. Thins northward

Yr RUIN GRANITE (Proterozoic Y)--Pinkish-gray coarse-grained porphyritic biotite-bearing quartz monzonite. Western part of the area includes brownish-orange to brownish-red coarse-grained granite that resembles the Payson Granite of Putnam and Burnham (1963) of Proterozoic Y age that is found in the Tonto Basin to the west

Fault--Dashed where approximately located or inferred; dotted where concealed. Bar and ball on downthrown side; arrow in direction of dip

Contact--Dashed where approximately located

Monocline--Showing trace and plunge of axis; dashed where approximately located

Strike and dip of beds
- Inclined
- Vertical
- Horizontal
- Overturned

Strike and dip of joints
- Inclined
- Vertical

Fault breccia

Boundaries of Wilderness and RARE II study areas

EXPLANATION

A MAGNETIC ANOMALY--Area of localized, relatively high magnetic values with known or presumed presence of Mescal Limestone (Proterozoic Y)

2 RADIOMETRIC ANOMALY--Numbers indicate areas of overlap of one or more eU, eU/eTh, and eU/K anomalies defined by values Greater than 18, 1.6, and 12, respectively. Highest number indicates most significant anomaly

DISCUSSION

The U.S. Geological Survey has flown an aerial radiometric and magnetic survey of the Sierra Ancha Wilderness and Salome study area, Gila County, Arizona, to aid an evaluation of the mineral potential of the area. Duval and Pitkin (1980) present the basic data from which this map is derived.

The areas on the map designated as radiometric anomalies were defined by first outlining areas on contour maps where eU values are greater than 18, eU/eTh values are greater than 1.6, and eU/K values are greater than 12. These cutoff values were arbitrarily chosen. The overlay of the three resulting maps was then labeled to indicate whether a given area was covered by anomalous values from 1, 2, or 3 maps. The areas on the map designated as magnetic anomalies coincide with areas where localized magnetic highs occur.

REFERENCES

Bergquist, J. R., Wrucke, C. T., and Shride, A. F., 1980, Geologic map of the Sierra Ancha Wilderness and Salome Study Area, Gila County, Arizona: U.S. Geological Survey Miscellaneous Field Studies Map MF-1162-A, scale 1:48,000, 1 sheet.

Duval, J. S., and Pitkin, J. A., 1980, An aerial radiometric and magnetic survey of the Sierra Ancha Wilderness and Salome Study Area, Gila County, Arizona: U.S. Geological Survey Open-File Report 80-2004.

Studies Related to Wilderness

The Wilderness Act (Public Law 88-577, Sept. 3, 1964) and related Acts require the U.S. Geological Survey and the U.S. Bureau of Mines to survey certain areas on Federal lands to determine their mineral resource potential. Results must be made available to the public and be submitted to the Administration and the Congress. This report presents the results of an aerial radiometric and magnetic survey of the Sierra Ancha Wilderness and Salome Study Area, Gila County, Arizona.

RADIOMETRIC AND MAGNETIC ANOMALIES OF THE SIERRA ANCHA WILDERNESS AND SALOME STUDY AREA, GILA COUNTY, ARIZONA

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