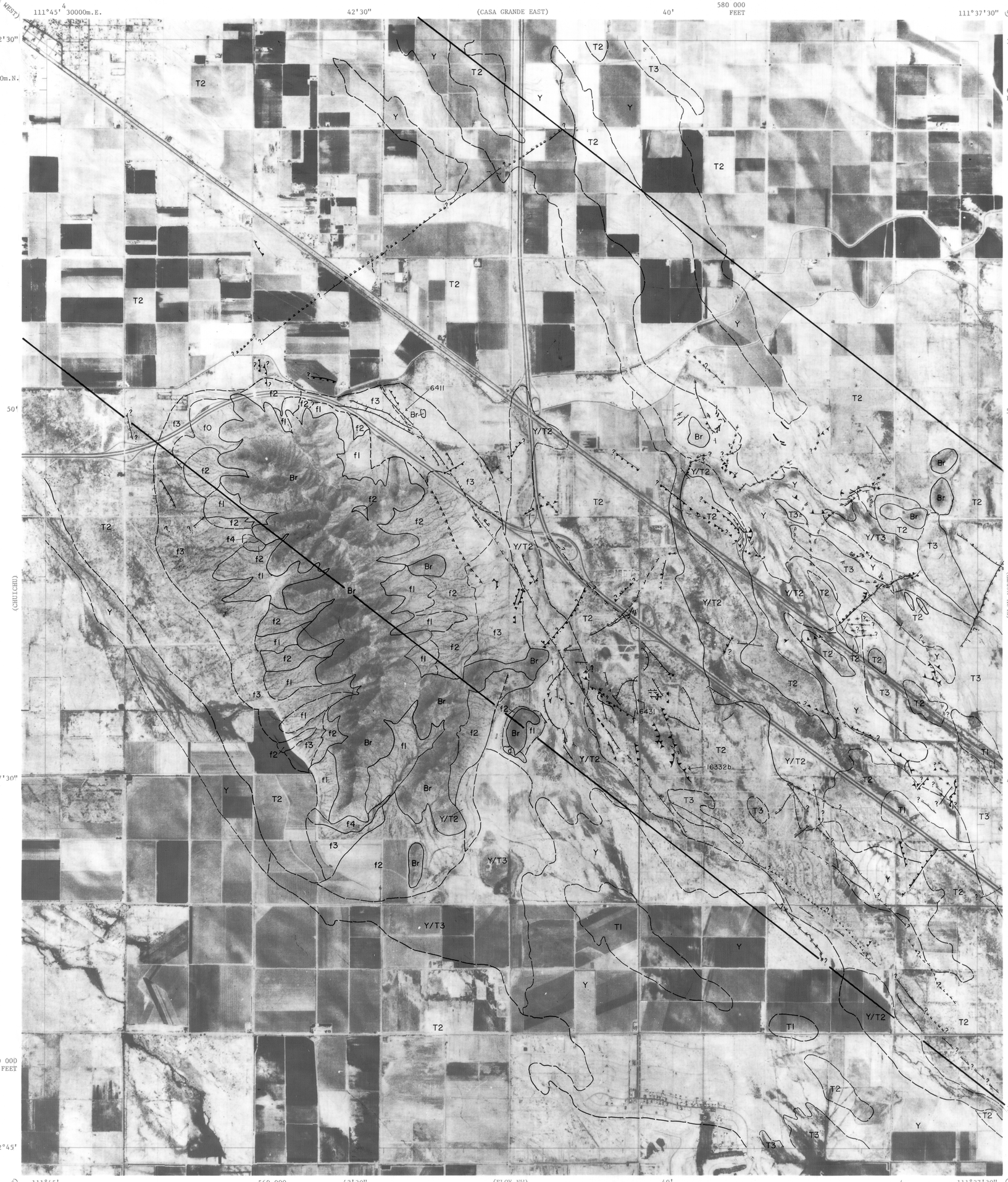
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF ARIZONA
ARIZONA RESOURCES INFORMATION SYSTEM

CASA GRANDE MTS. QUADRANGLE
ARIZONA-PINAL CO.
7.5 MINUTE ORTHOPHOTOQUAD



EARTH FISSURES DEVELOPED BEFORE MARCH 1989 AND SURFICIAL GEOLOGY, PICACHO BASIN, SOUTH-CENTRAL ARIZONA

by Steven Slaff, Garrett W. Jackson, Philip A. Pearthree

1989

EXPLANATION

FISSURES

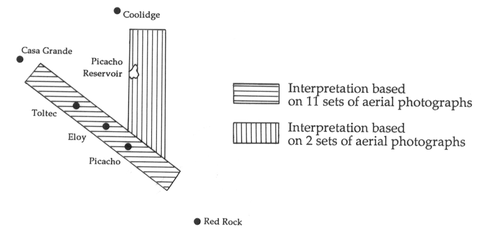
Earth-fissure trace: long dash where feature is discontinuous; short dash where feature is discontinuous and location is less certain; queried where identification as an earth fissure is uncertain.

Fissures formed during the following intervals:

- Before August 1959
- August 1959 - December 1963
- December 1963 - August 1967
- August 1967 - June 1969
- June 1969 - November 1971
- November 1971 - May 1975
- Before December 1975
- May 1975 - December 1976
- December 1976 - January 1978
- January 1978 - May 1985
- May 1985 - August 1987
- December 1975 - March 1989 on Valley Farms, Picacho Reservoir, and northernmost 2 miles of Red Rock NW orthophotoquads; August 1987 - March 1989 at all other locations

28331 Designation of fissure that is used in Table 1 and appears in a figure

Approximate boundary of area depicted on aerial photographs



SURFICIAL UNITS

Y Active stream channels. Experience seasonal flooding and sediment transport. Sediment composed dominantly of fine sand, silt and clay in the gentle swales of the basin floor; in the well-defined channels of the piedmont slopes, sediments are sand and gravel. Soils are very weakly developed (entisols).

T3 Early to mid-Holocene basin terraces. Cover large areas in southern Picacho basin. Little soil development (camborthids). Composed of fine-grained sediments (<2mm in diameter), as are all basin terrace units. One exception is in the southern part of Red Rock NW orthophotoquad, where a thin gravel deposit with well rounded clasts is exposed at the surface. Little or no rock varnish or desert pavement development.

T2 Late Pleistocene-early Holocene basin terraces. Deposited by the ancestral Santa Cruz River and axial streams. Soils on this surface typically contain argillic horizons (haplargids) and/or moderately developed (stage II) calcic horizons (calciorthids). Many areas have strongly alkaline soils (natrargids).

T1 Oldest terraces in the basin; mid-Pleistocene in age. Petrocalcic horizons (stage III-IV) and silica-cemented duripans are common (petrocalcic paleargids), but argillic horizons may or may not be preserved. Less extensive in area than other terraces. Found in widely scattered patches throughout the basin. Virtually all of the surface is cultivated: Any altitudinal difference between these and the other basin terraces has been eliminated.

f4 Active alluvial fans. May experience seasonal flooding and sediment transport. Material is sand to boulder size. Occurs on flanks of the Picacho and Casa Grande Mountains. Typically found near mountain fronts.

f3 Early to middle Holocene alluvial fans. Weakly to moderately developed soils (camborthids). Common on the lower reaches of piedmonts. Incipient rock varnish is present. Little or no pavement development. Stream channels are incised less than 1 m. This unit is typically finer-grained than older units or f4, dominantly sand and pebbles.

f2 Late Pleistocene alluvial fans. Surfaces have well-developed soils with argillic and/or calcic (stage II+) horizons (haplargids and calciorthids). Preserved only on higher slopes of piedmonts, relatively close to mountain fronts. Varnish is moderately developed. Pavement is moderately developed, but discontinuous. Incised up to 2 m. Clast size ranges from sand to cobbles; average size is larger than clasts in the younger fan units.

f1 Middle Pleistocene alluvial fans. Soils have petrocalcic horizons with or without argillic horizons. These fans are found high on piedmont slopes. Varnish is well developed. Pavement also is well developed, but discontinuous. Incised up to 3 m. Grain size is similar to that of f2.

f0 Oldest alluvial fans in the basin (early(?) to middle Pleistocene). Present only on the south side of Picacho Peak. Soil is poorly preserved, and petrocalcic horizons (stage IV) occur at the ground surface. Pieces of petrocalcic horizons are commonly scattered about on the surface. Deeply dissected; incised up to 8 m. Pavement very well developed but discontinuous due to erosion. This unit is the highest (relatively) in the basin, which also indicates great antiquity.

d Vegetated, inactive eolian deposits and deflated areas. Occur extensively in Picacho Reservoir area. Soil, where present, is mostly massive and alkaline. Grain size is silt and fine sand.

Y-P Historic playa sediments deposited at Picacho Reservoir.

Y/T3 Two symbols separated by a slash means that the upper (younger) unit is a discontinuous veneer on the lower (older) unit. In this case, "Y" may represent fine-grained deposits or the stripped surface of the older unit.

Br Bedrock

Contact

Gradational contact

Contact location uncertain

ARIZONA GEOLOGICAL SURVEY OPEN FILE REPORT 89-10

PLATE 3 OF 6

AZGS OFR 89-10

Prepared by the U.S. Geological Survey

Additional contributing agencies: U.S. Department of Transportation, Federal Highway Administration, Arizona State Highway Department, and Arizona State Land Department

Orthophotoquad from 1:120,000-scale aerial photographs taken May 1972 by the National Aeronautics and Space Administration
Controlled by aerotriangulation adjusted to ground control positions

Transverse Mercator projection. 1927 North American datum
1,000-meter Universal Transverse Mercator grid ticks, zone 12
10,000-foot grid ticks based on Arizona coordinate system, central zone

SCALE 1:24000

This map complies with National Map Accuracy Standards
For Sale by State of Arizona
Arizona Resources Information System, Phoenix, Arizona 85013

UTM GRID AND 1972 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

ARIZONA
INDEX TO 7.5' QUADRANGLE LOCATION

CASA GRANDE MTS., ARIZ.
N3245-W11137.5/7.5
ORTHOPHOTOQUAD
1972