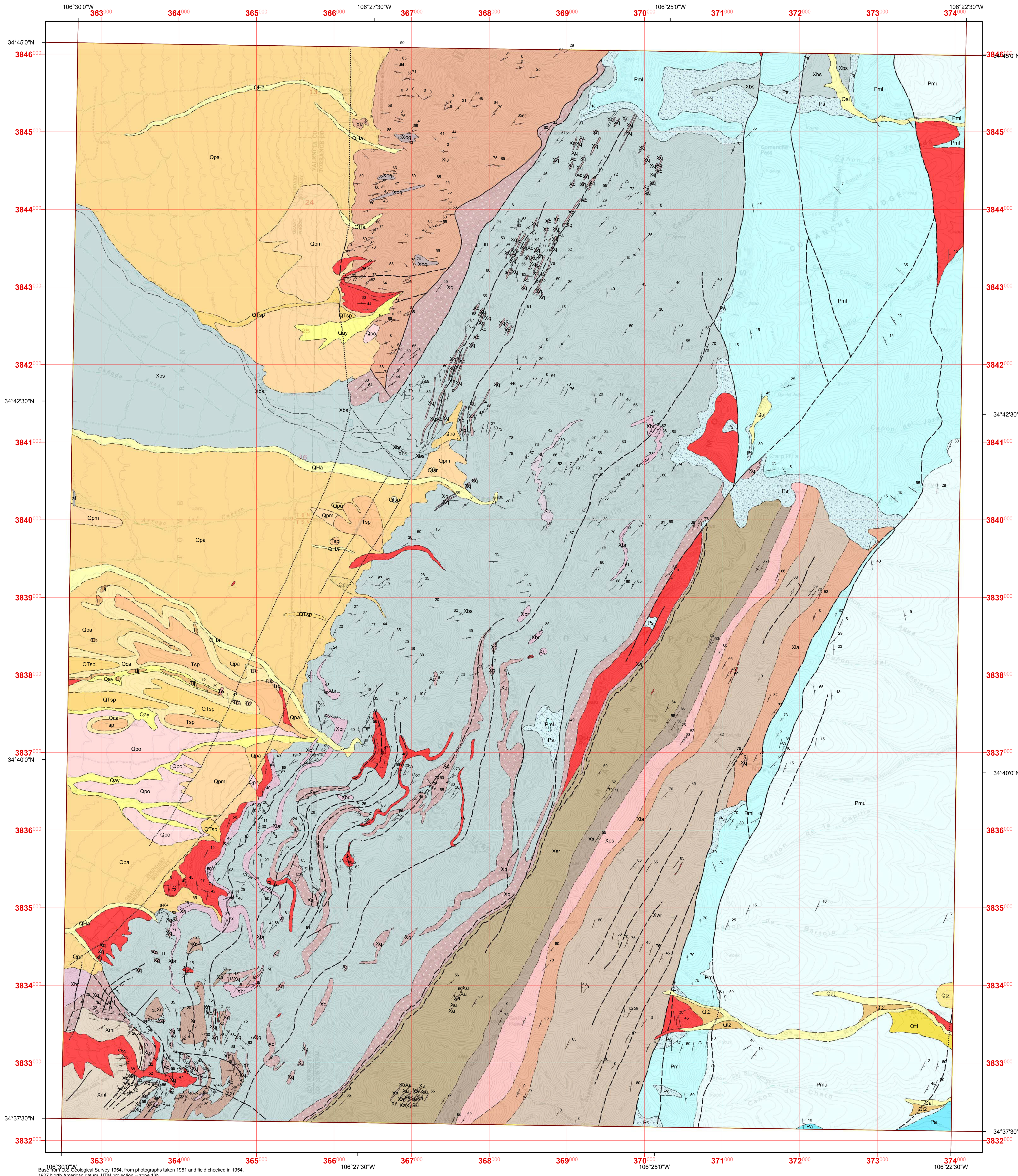
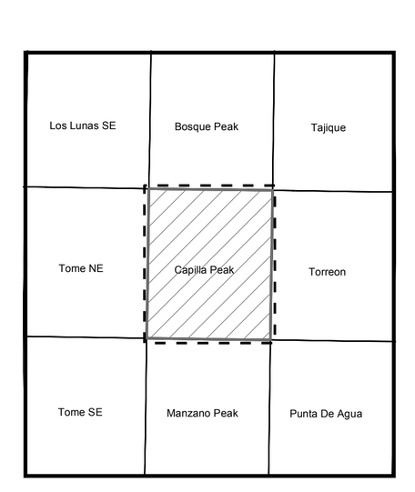


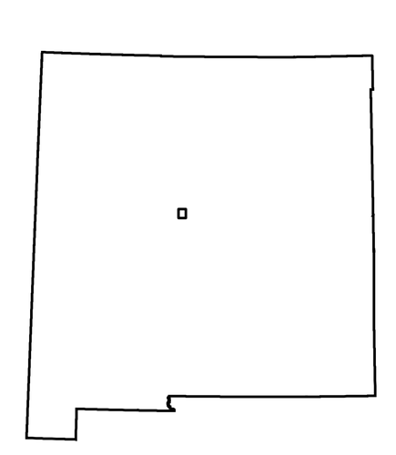
Base from U.S.Geological Survey 1954, from photographs taken 1951 and field checked in 1954.
1927 North American datum, UTM projection -- zone 13N
1000- meter Universal Transverse Mercator grid, zone 13, shown in red

Geologic Map of the Capilla Peak 7.5 - minute Quadrangle

by
K. E. Karlstrom, S. D. Connell, S. A. Rodgers
and E. B. Crawford

May 2000





Magnetic Declination
July, 2005
9º 49' East
At Map Center

1:24,000

0 0.25 0.5 1 1.5 2 Miles

0 0.25 0.5 1 1.5 2 Kilometers

CONTOUR INTERVAL 20 FEET

NATIONAL GEODETIC VERTICAL DATUM OF 1929

COMMENTS TO MAP USERS

A geologic map displays information on the distribution, nature, orientation, and age relationships of rock and deposits and the occurrence of structural features. Geologic and fault contacts are irregular surfaces that form boundaries between different types or ages of units. Data depicted on this geologic quadrangle map may be based on any of the following: reconnaissance field geologic mapping, compilation of published and unpublished work, and photogeologic interpretation. Locations of contacts are not surveyed, but are plotted by interpretation of the position of a given contact onto a topographic base map; therefore, the accuracy of contact locations depends on the scale of mapping and the interpretation of the geologist(s). Any enlargement of this map could cause misunderstanding in the detail of mapping and may result in erroneous interpretations. Site-specific conditions should be verified by detailed surface mapping or subsurface exploration. Topographic and cultural changes associated with recent development may not be shown.

Cross sections are constructed based upon the interpretations of the author made from geologic mapping, and available geophysical, and subsurface (drillhole) data. Cross-sections should be used as an aid to understanding the general geologic framework of the map area, and not be the sole source of information for use in locating or designing wells, buildings, roads, or other man-made structures.

The map has not been reviewed according to New Mexico Bureau of Geology and Mineral Resources standards. The contents of the report and map should not be considered final and complete until reviewed and published by the New Mexico Bureau of Geology and Mineral Resources. The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the State of New Mexico, or the U.S. Government.

This work was performed under the STATEMAP component of the USGS National Cooperative Geologic Mapping Program. Funding for geological mapping was provided by the U.S. Geological Survey and the New Mexico Bureau of Geology and Mineral Resources, a division of New Mexico Tech.

New Mexico Bureau of Geology
New Mexico Tech
801 Leroy Place
Socorro, NM 87801-4796

[505] 835-5420
http://geoinfo.nmt.edu

This and other maps are available in PDF format from:
http://geoinfo.nmt.edu/statemap

or contact:
NMBGMR Publications -- [505] 835-5410
NMBGMR Geologic Information Center -- [505] 835-5145

DRAFT
NMBGMR OF-GM 00

This draft geologic map was produced from scans of hand-drafted originals from the author(s). It is being distributed in this form because of the demand for current geologic mapping in this important area. The final release of this map will be made following peer review and redrafting in color using NMBGMR cartographic standards. The final product will be made available on the internet as a PDF file and in a GIS format.

Capilla Peak Quad Rock Units (5/23/00)

The following lithologies (oldest-to-youngest) are proposed:

Xsr Sevilleta metarhyolite
Xa Amphibolite
Xps Pelitic schist
Xla Lithic arenite
Xwr White Ridge quartzite
Xq Sais quartzite
Xbs Blue Springs schist
Xr Metarhyolite
Xmc Metachert
Xog Ojito granite
Xml Monte Largo granite
Ps Sandia Formation
Pml Madera Group, lower cherty fossiliferous limestone unit
Pmu Madera Group, upper arkosic unit

Xsr – Sevilleta Metarhyolite:

Mainly felsic metaigneous rocks (metarhyolite) with abundant, but volumetrically minor, amphibolite dikes and sills (a) and scattered quartzite and schist. Metarhyolites are generally red, pink or gray blocky-fracturing porphryitic aphanites with quartz and feldspar clasts typically about 1 mm across. In some rocks, quartz clasts macroscopically evidence east-side-up shearing. Texture ranges from thin, well-developed compositional banding to massive. Planar features, which may be flow bands or shear bands, are common and range considerably in thickness. Quartz veins, quartz lenticles and pegmatite are present locally and generally parallel foliation

Xa – Amphibolite:

Mainly black to dark green, fine- to coarse-grained amphibolites with varying amounts of macroscopic white plagioclase which range in texture from salt-and-pepper to smeared-out shear banding. Coarse-grained metadiorites are present locally. Mafic units have apparent widths up to 150+ m and may thicken, thin, fork and pinch out along strike. Equivalent to the pCb "basic schist" unit of Myers and McKay (1972).

Xps – Pelitic Schist:
Mainly schistose metasediments intruded by, or interlayered with, mafic metaigneous dikes and flows. The metasediments are mostly quartz-muscovite schists that are often strikingly colored in shiney reds, silvers and golds. Staurolite and amphibolite porphyroblasts are sometimes present in the schists. Protoliths were probably siltstones. Equivalent to the pCmf "mixed flow" unit of Myers and McKay (1972).

Xla - Lithic Arenite:
This unit consists of a variety of metasedimentary rocks including metawacke, metaarkose and impure metaquartzite. For the most part, this unit consists of equal volumes of brown weathered arkosic phyllites and impure arkosic quartzite with light green to gray fresh surfaces. The phyllites and some quartzites are thinly bedded; more massive, quartzite facies are dominant locally. Schistosity is variably developed

throughout the unit. The phyllites show excellent cleavage and a silvery sericitic sheen on smooth cleavage surfaces. Chloritoid and andalusite porphyroblasts are common on phyllitic cleavage surfaces in the northwest corner of the quadrangle, probably due to its proximity of the Ojito pluton to the north. Compositional layering (So) is commonly preserved and is generally at low angle to the dominant schistosity (S1). Includes the Bosque and Moyas metatsedimentary units of Edwards (1978), the lower metaclastic series of Reiche (1949) and the flaggy schist zone of Myers and McKay (1972).

Xwr – White Ridge Quartzite:

Mainly brownish-white, massive to well-bedded quartzite. Gray, pink, red and purple facies occur locally. Bedding planes commonly show sericitic reflecting surfaces. Grain size ranges from very fine to coarse sand; larger grains often evidence shearing. Thinner beds of sericite-quartz schist are found within the quartzite; quartz dikes (q) intrude it; and an arkosic, conglomeritic facies containing mm-sized blue quartz and plagioclase crystals lies along the west margin of the unit. The unit grades into lithic arenite on both its east and west margins.

Xq - Sais Quartzite:
Mainly bluish-gray to milky-white, massive to bedded to highly mylonitic quartzite. Greenish-gray, pink, lavender and purple facies occur locally. In hand sample, it generally appears to be a purer quartzite than that found in the Xla and Xwr units. Cross bedding is locally preserved. Correlates with the Cerro Pelon and Coyote quartzites of Cavin (1985) and the Sais and pCmq quartzite units of Myers and McKay (1972).

Xbs - Blue Springs Schist:
Mainly muscovite-chlorite schists and phyllites ranging in color from blueish-green to reddish-gray. They range in composition from sericite schist to chlorite-quartz schist. Compositional layering (So) has been transposed into S1 that is sometimes preserved within, and is occasionally at high angle to, an S2 crenulation cleavage, the dominant foliation. Outcrops of schist are characterized by numerous lenticular and fish-hook shaped quartz veins, lenses, and pods that are oriented subparallel to S2, range from mm to cm in width and tens of cm in length, and makeup as much as 50% of the rock. Quartzose pegmatites containing pink feldspar are common locally. Relatively small, isolated outcrops of brown quartzite and laminated metachert are found throughout the unit. The protolith may have been an iron-rich impure shale which accumulated in a fairly deep-water, low-energy basin and was threreafter intruded by silica-rich fluids and indurated in an accretionary wedge environment.

Xmc - Metachert:

Dominantly a distinctive fine-grained, silicious, well-laminated micaceous quartzite that is often colorfully stripped (pink, green, gray) and complexly folded. Laminae range from 1 mm to 10 cm thick and probably represent S0 or S1 layering. Folds (F2) are generally small, open to tight, and disharmonic. The protolith may have been an impure chert.

Xr – Metarhyolite:

Pink, blocky-fracturing, aphanitic metarhyolite. Quartz veins and lenticles are present locally. Textures range from massive to crudely laminated. Macroscopic quartz and

Capilla Peak Quad Rock Units (5/23/00)

The following lithologies (oldest-to-youngest) are proposed:

Xsr Sevilleta metarhyolite
Xa Amphibolite
Xps Pelitic schist
Xla Lithic arenite
Xwr White Ridge quartzite
Xq Sais quartzite
Xbs Blue Springs schist
Xr Metarhyolite
Xmc Metachert
Xog Ojito granite
Xml Monte Largo granite
Ps Sandia Formation
Pml Madera Group, lower cherty fossiliferous limestone unit
Pmu Madera Group, upper arkosic unit

Xsr – Sevilleta Metarhyolite:

Mainly felsic metaigneous rocks (metarhyolite) with abundant, but volumetrically minor, amphibolite dikes and sills (a) and scattered quartzite and schist. Metarhyolites are generally red, pink or gray blocky-fracturing porphryitic aphanites with quartz and feldspar clasts typically about 1 mm across. In some rocks, quartz clasts macroscopically evidence east-side-up shearing. Texture ranges from thin, well-developed compositional banding to massive. Planar features, which may be flow bands or shear bands, are common and range considerably in thickness. Quartz veins, quartz lenticles and pegmatite are present locally and generally parallel foliation

Xa – Amphibolite:

Mainly black to dark green, fine- to coarse-grained amphibolites with varying amounts of macroscopic white plagioclase which range in texture from salt-and-pepper to smeared-out shear banding. Coarse-grained metadiorites are present locally. Mafic units have apparent widths up to 150+ m and may thicken, thin, fork and pinch out along strike. Equivalent to the pCb "basic schist" unit of Myers and McKay (1972).

Xps – Pelitic Schist:
Mainly schistose metasediments intruded by, or interlayered with, mafic metaigneous dikes and flows. The metasediments are mostly quartz-muscovite schists that are often strikingly colored in shiney reds, silvers and golds. Staurolite and amphibolite porphyroblasts are sometimes present in the schists. Protoliths were probably siltstones. Equivalent to the pCmf "mixed flow" unit of Myers and McKay (1972).

Xla - Lithic Arenite:
This unit consists of a variety of metasedimentary rocks including metawacke, metaarkose and impure metaquartzite. For the most part, this unit consists of equal volumes of brown weathered arkosic phyllites and impure arkosic quartzite with light green to gray fresh surfaces. The phyllites and some quartzites are thinly bedded; more massive, quartzite facies are dominant locally. Schistosity is variably developed

1