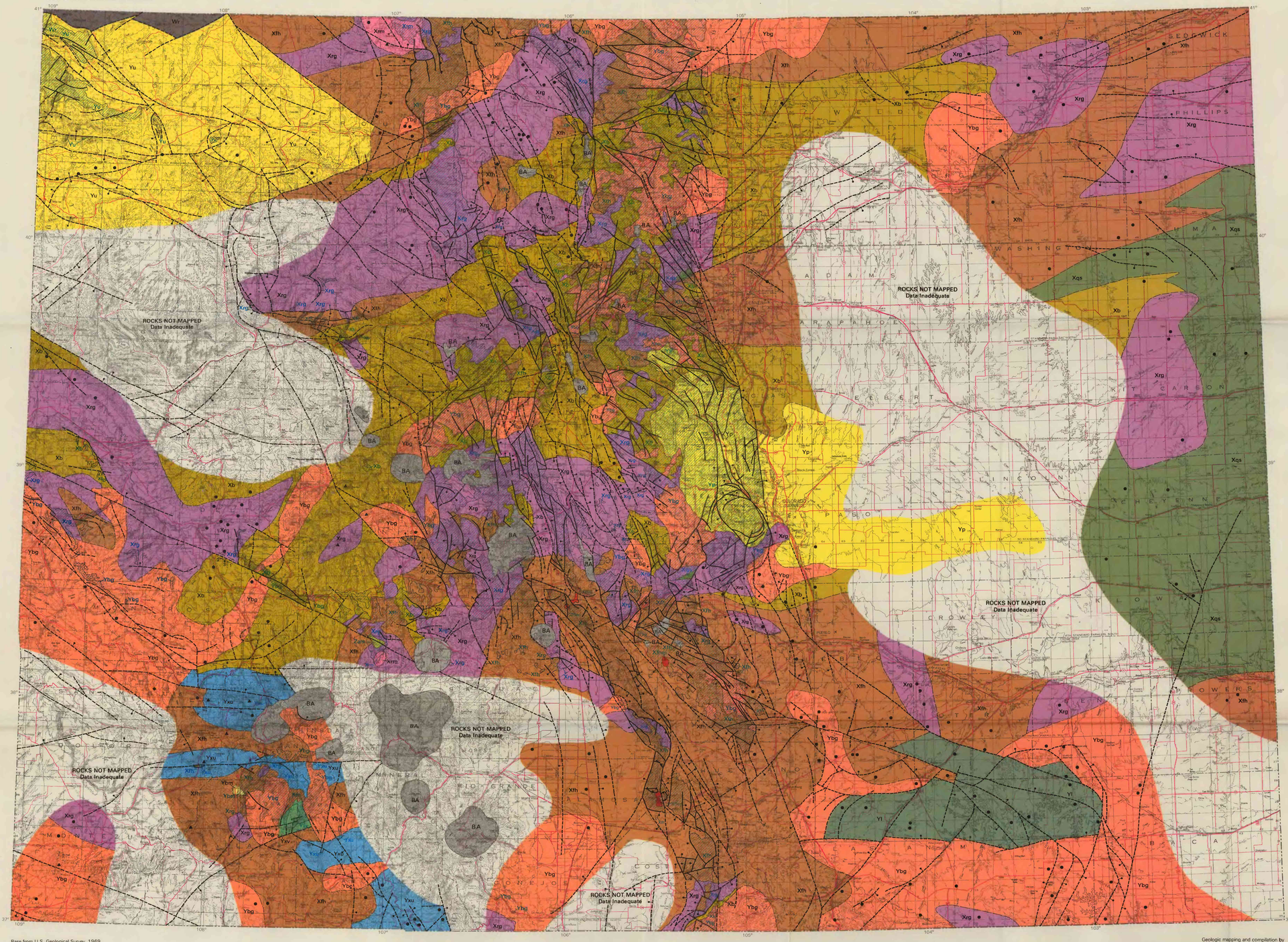


Base from U.S. Geological Survey, 1969

Geologic mapping and compilation by
Ogden Tweto, 1972–82

SCALE 1:1 000 000

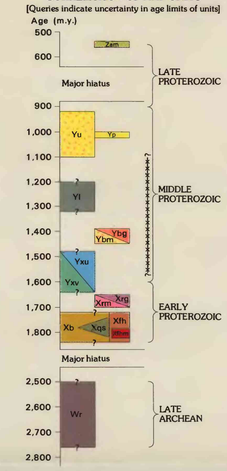
25 0 25 50 75 100 MILES

25 0 25 50 75 100 KILOMETERS

CONTOUR INTERVAL 500 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

CORRELATION OF MAP UNITS

[Queries indicate uncertainty in age limits of units]



DESCRIPTION OF MAP UNITS

Surface Subsurface

Zsm — ALKALIC AND MAFIC INTRUSIVE ROCKS OF IRON HILL (LATE PROTEROZOIC AND EARLY CAMBRIAN)

Yu, Yu — UINTA MOUNTAIN GROUP (MIDDLE PROTEROZOIC)——Quartzite, conglomerate, and shale

Yp, Yp — ROCKS OF THE PIKES PEAK BATHOLITH (MIDDLE PROTEROZOIC)——Pink, coarse-grained biotite granite pierced by plutons of cogenetic, fine-grained granite, fayalite granite, riebeckite granite, alkali granite, syenites, and gabbro

Yl — LAS ANIMAS FORMATION (MIDDLE PROTEROZOIC)——Dark slate, phyllite, fine-grained graywacke, and chert; upper part is dark red and contains subordinate volcanic rocks and thin beds of carbonate rocks

BERTHOUD PLUTONIC SUITE (MIDDLE PROTEROZOIC)

Ybg, Ybg — Granitic rocks ——Light-gray to pink muscovite-biotite or biotite granite or quartz monzonite in several batholiths and smaller plutons, and minor syenitic rocks in small plutons

Ybm, Ybm — Mafic rocks——Dark olivine and pyroxene gabbro in small pluton

Yxu, Yxu — UNCOMPAHGRE FORMATION (MIDDLE AND EARLY PROTEROZOIC)——Gray and dark-green quartzite, slate, and phyllite

Yxv, Yxv — VALLECITO CONGLOMERATE (MIDDLE AND EARLY PROTEROZOIC)——Gray, crossbedded conglomerate and quartzite

ROUTT PLUTONIC SUITE (EARLY PROTEROZOIC)

Xrg, Xrg — Granitic rocks——Gray to reddish-gray, even-grained to porphyritic, massive to foliated granodiorite, quartz monzonite, quartz diorite, and trondhjemite

Xrm, Xrm — Mafic rocks——Dark-gray to black gabbro, hornblende diorite, hornblendite, and pyroxenite

EARLY PROTEROZOIC GNEISS COMPLEX

Xb, Xb — Biotite gneiss, migmatite, and minor quartz gneiss, mica schist, marble, and calc-silicate rock; largely metasedimentary

Xqs, Xqs — Quartzite and mica schist facies of Xb unit

Xfh, Xfhm, Xfh — Felsic and hornblendic gneisses——Quartzofeldspathic gneiss, hornblende gneiss, amphibolite, and greenstone; largely metavolcanic; Xfhm, metagabbro facies

Wr, Wr — LATE ARCHEAN ROCKS——Metaquartzite, mica schist, amphibolite, quartz mylonite, and tectonic slivers of granitic gneiss

BA — BASEMENT ABSENT——Basement surface is perforated by Phanerozoic igneous body

MIDDLE PROTEROZOIC DIKE——Mafic or intermediate composition

CONTACT, OR LIMIT OF BASEMENT AT SURFACE

BOUNDARIES BETWEEN GEOLOGIC UNITS INFERRED FROM SUBSURFACE DATA——Approximately located

FAULT——Solid where basement is at surface; short-dashed in subsurface. Bar and ball on downthrown side; double-barbed arrow indicates inferred direction of dip; paired single-barbed arrows indicate relative horizontal displacement; opposing sets indicate different displacements at different times; numbers indicate sequence of displacements, where known

THRUST FAULT——Teeth on upper plate; shown only in basement rocks at surface

PRECAMBRIAN SHEAR ZONE——Continuous line marks boundary between rock types; shown as fault in subsurface

BOREHOLE TO BASEMENT

INCLUSIONS OF BASEMENT ROCKS IN PHANEROZOIC PLUTON

GEOLOGIC MAP OF THE PRECAMBRIAN BASEMENT IN COLORADO