DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS GEOLOGIC INVESTIGATIONS
MAP I-532-C

Modified base assembled from U.S. Coast and Geodetic Survey World Aeronautical Charts
Lambert conformal conic projection

Geology compiled in 1965-67

EXPLANATION

Applies to map only

QUATERNARY

- Qm — Quaternary marine deposits
- Qd — Quaternary continental deposits
- Qv — Quaternary volcanic rocks *Largely of basaltic composition. Includes some small intrusive bodies in Arizona*
- QTv — Quaternary and Tertiary volcanic rocks

TERTIARY

- Ti, Ti-1 — Tertiary intrusive rocks
- Tvs, Tv, Ts — Tertiary volcanic and sedimentary rocks *Tvs, volcanic and sedimentary rocks. Used only in part of Nevada. Tv, volcanic rocks. Ts, sedimentary rocks*

CRETACEOUS

- Kv — Cretaceous volcanic rocks
- Ks — Cretaceous sedimentary rocks
- KJf — Franciscan Formation

JURASSIC

- Js, Jr — Jurassic sedimentary rocks *Knoxville Formation (Js) shown separately in California*
- JTRv — Jurassic and Triassic volcanic and metavolcanic rocks
- JTRs — Jurassic and Triassic sedimentary and metasedimentary rocks *Includes Mesozoic sedimentary rocks in Arizona, undivided sedimentary rocks in Nevada, and Glen Canyon Group in Utah*
- Mzs — Mesozoic sedimentary rocks

TRIASSIC

- Ts — Triassic sedimentary rocks

PERMIAN

- Pv — Permian sedimentary rocks *Includes Kaibab Limestone and Toroweap Formation*
- PPPv — Permian and Pennsylvanian sedimentary rocks *Includes Coconino, Hermit, and Supai Formations (Permian) and Callville Limestone (Permian through Mississippian). East of 111° W in Grand Canyon, also includes Redwall (Mississippian) and Martin (Devonian) Formations*

PENNSYLVANIAN AND MISSISSIPPIAN

- Mr — Mississippian sedimentary rocks
- MDr — Mississippian and Devonian sedimentary rocks
- Dr — Devonian sedimentary rocks
- Sr — Silurian sedimentary rocks
- Ouom — Upper and Middle Ordovician sedimentary rocks
- Ol — Lower Ordovician sedimentary rocks
- Or — Ordovician rocks
- Pzu — Upper Paleozoic rocks *In Nevada, includes Permian, Pennsylvanian, and Mississippian rocks*

ORDOVICIAN

- Pzl — Lower Paleozoic rocks *In Nevada and California, includes Devonian through Middle Cambrian rocks*

SILURIAN

- Pzr — Paleozoic rocks

CAMBRIAN

- Cu — Upper Cambrian sedimentary rocks
- Cm — Middle Cambrian sedimentary rocks
- Cl — Lower Cambrian sedimentary rocks
- CuCr — Cambrian and younger Precambrian rocks
- Cr — Cambrian rocks

PRECAMBRIAN

- pCr — Precambrian rocks *Mainly metamorphic rocks, but in Utah and Nevada, includes granitic rocks*
- pCg — Precambrian granitic rocks

MESOZOIC

- Mzs — Mesozoic sedimentary rocks
- Mg — Mesozoic granitic rocks *Probably includes some Tertiary rocks*
- Mzb — Mesozoic basic intrusive rocks
- Mzub — Mesozoic ultrabasic intrusive rocks

ROCKS OF UNKNOWN OR UNCERTAIN AGE

Mainly roof pendants in Sierra Nevada batholith

- mv — Metavolcanic rocks
- ms — Metasedimentary rocks
- mg — Granitic and metamorphic rocks *Used only in California*

Contact

Fault *Dashed where approximately located, dotted where concealed*

Thrust fault *Sawteeth on upper plate*

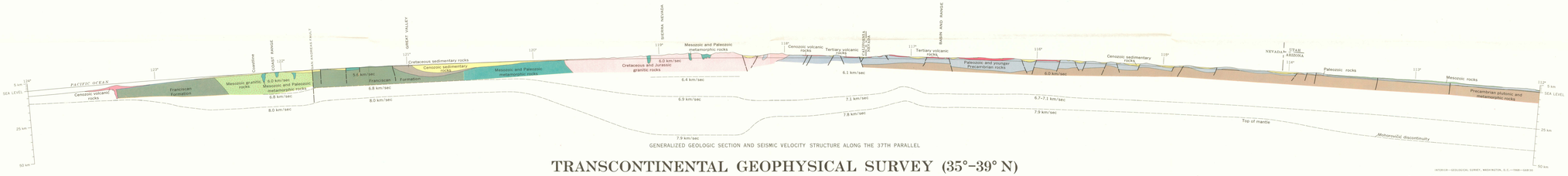
SOURCES OF DATA

Arizona:
Arizona Bureau of Mines, geologic maps of Coconino (1960), Mojave (1959), Navajo and Apache (1960), and Yavapai (1958) Counties

California:
California Division of Mines and Geology, published and unpublished 250,000 series Geologic Map Sheets of California

Nevada:
Unpublished map compiled at 1:1,000,000 scale by K. M. Montgomery, U.S. Geological Survey

Utah:
Utah State Land Board, 1963, Geologic map of southwestern Utah



GENERALIZED GEOLOGIC SECTION AND SEISMIC VELOCITY STRUCTURE ALONG THE 37TH PARALLEL

TRANSCONTINENTAL GEOPHYSICAL SURVEY (35°–39° N)

GEOLOGIC MAP FROM 112° W LONGITUDE TO THE COAST OF CALIFORNIA

By
John E. Carlson and Ronald Willden

A CONTRIBUTION TO THE UPPER MANTLE PROJECT

SCALE 1:1 000 000

25 0 25 50 75 100 MILES

25 0 25 50 75 100 KILOMETERS

DATUM IS MEAN SEA LEVEL

1968

INDEX MAP SHOWING AREA COVERED BY THE TRANSCONTINENTAL GEOPHYSICAL SURVEY
AREA OF THIS MAP SHADED

Thickness of Paleozoic rocks, depth to Precambrian rocks, and seismic velocities and velocity structure are from:
Longwell, C. R., Pampeyan, E. H., Bowyer, Ben, and Roberts, R. J., 1965, Geology and mineral deposits of Clark County, Nevada: Nevada Bur. Mines Bull. 62
U.S. Geological Survey and American Association of Petroleum Geologists, 1961, Tectonic map of the United States exclusive of Alaska and Hawaii: U.S. Geol. Survey [1962]
Unpublished material in files of the U.S. Geological Survey

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.—1968—G68120

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