

Base from U.S. Geological Survey, 1:62,500, 1959
10,000-foot grid based on California coordinate system, zone 2
1000-meter Universal Transverse Mercator grid ticks, zone 10

Geology in T. 12 N., R. 8 E., secs. 22, 23, and 26, in part after unpublished map by U.S. Bureau of Reclamation (1957); in T. 11 N., R. 8 E., secs. 16, 20, 21, 27, 28, 29, and 33, in part after Cater, Rynerson, and Dow (1951, pl. 9) and Wells, Page, and James (1940)

EXPLANATION

Platensioene and Holocene

- Qs: Fluvial sediments; Unconsolidated sand, gravel, and silt
- Qta: Gravel of uncertain age; Weathered gravel on surfaces above present drainage

Eocene(?) to Pliocene

- Tfa: Fragmental andesite; Andesitic tuff breccia, conglomerate, sandstone, and siltstone
- Gravel: Older gravel consisting of pebbles and cobbles of chemically and mechanically resistant pre-Cenozoic rocks; intercalated clayey arkose, silt, and sand

MAJOR UNCONFORMITY

- Leucocratic dikes and sills; Aplit, alaskite, and pegmatite. Shown diagrammatically in contact zone of Penryn and Rocklin plutons

Upper Jurassic or Lower Cretaceous

- Kjr: Rocklin pluton; Trondhjemite
- Kjpl, Kjpm, Kjpd: Penryn pluton; Quartz diorite (Kjpl, light-colored phase; Kjpm, medium-colored phase; Kjpd, dark-colored phase)

JURASSIC OR OLDER

- Qd: Quartz diorite at Oregon Bar; Sheared, hydrothermally altered quartz diorite

ULTRAMAFIC AND MAFIC ROCKS

- ggb: Gabbro and metagabbro; Includes sills and dikes of diabase and metadiabase
- pxg: Pyroxenite and gabbro; Banded pyroxenite and gabbro having layers too thin or too poorly exposed to map separately
- py: Pyroxenite and metapyroxenite
- sa: Serpentine and peridotite; Dotted where silicified; sa, interlayered serpentine and amphibolite; layers too thin or too poorly exposed to map separately

METAMORPHIC ROCKS

METAVOLCANIC ROCKS

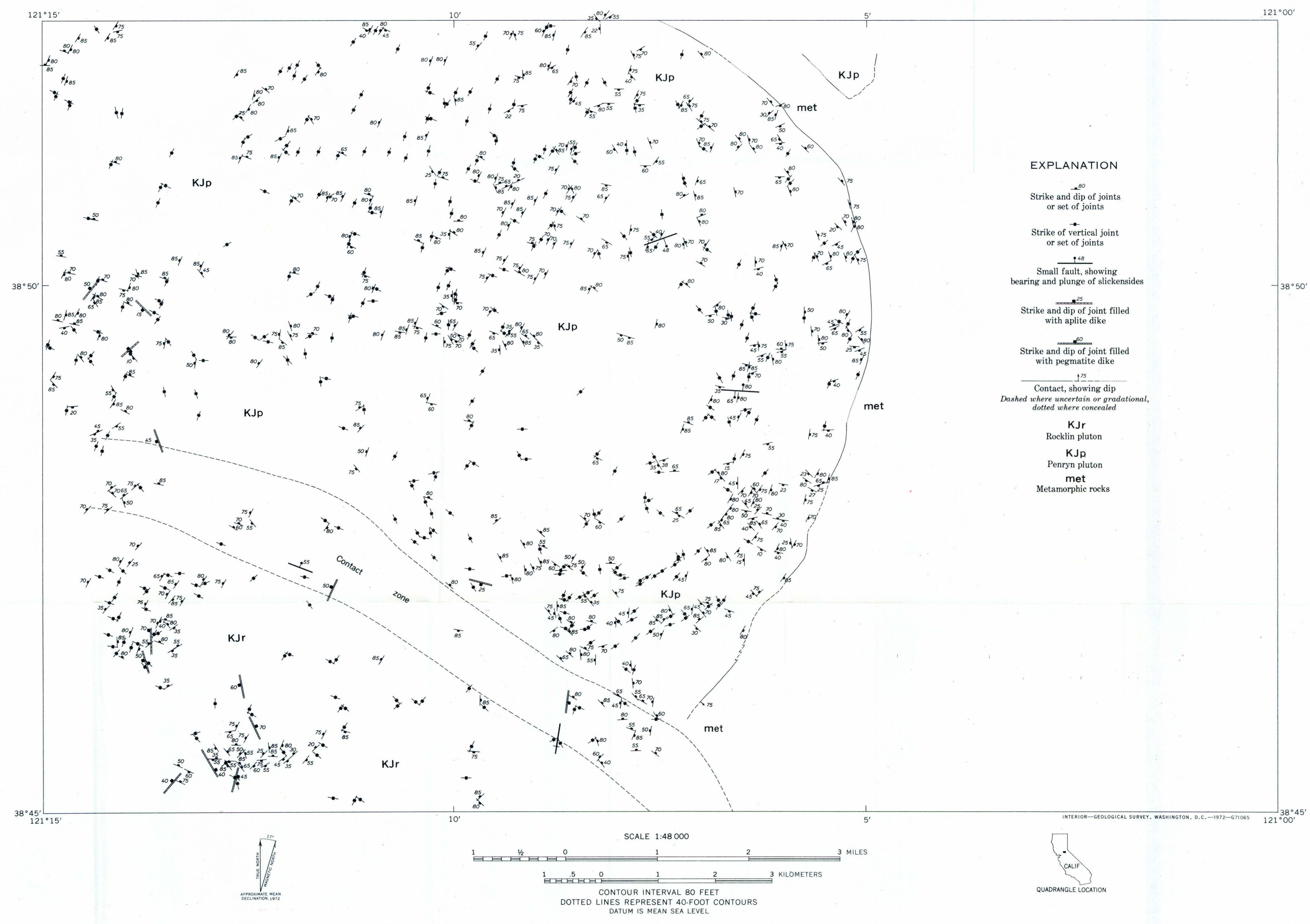
- am₁, am₂, am₃, am₄: Amphibolite; Mafic to intermediate pyroclastic rocks and flows; minor intercalated silicic tuff and epiclastic rocks. Metamorphosed chiefly in almandine amphibolite facies of Fyfe, Turner, and Verhoogen (1958); am₁, schistose to massive oligoclase-epidote-amphibole rocks; dotted pattern, porphyritic phase; am₂, chiefly massive hornblende-oligoclase-epidote rocks; dotted pattern, porphyritic phase; am₃, banded hornblende-andesite (or labradorite) rocks; am₄, heterogeneous amphibole-bearing rocks
- gs: Greenstone and greenschist; Mafic to silicic volcanic rocks and minor interbedded sedimentary rocks; massive to schistose, containing chiefly albite, epidote, and chlorite. Metamorphosed to greenschist facies

METASEDIMENTARY ROCKS

- ms: Metasedimentary rocks undivided; Phyllite, quartzite, mica schist, and related metamorphosed epiclastic rocks; includes minor intercalated crystalline limestone and meta-volcanic rocks
- ls: Crystalline limestone
- qv: Quartz vein

Relative age unknown

- Contact, showing dip; Dashed where uncertain or gradational, dotted where concealed
- Long dashed where approximately located, short dashed where indefinite or gradational, dotted where concealed, queried where doubtful
- Fault; Dashed where approximately located, queried where doubtful
- Broad fault zone or shear zone
- Strike and dip of primary foliation in plutonic rocks and of foliation in metamorphic rocks
- Strike of vertical foliation
- Bearing and plunge of primary and secondary lineations in plutonic rocks and of lineation in metamorphic rocks
- Bearing of horizontal lineation
- Sample locality (x 5)



EXPLANATION

- Strike and dip of joints or set of joints
- Strike of vertical joint or set of joints
- Small fault, showing bearing and plunge of slickensides
- Strike and dip of joint filled with aplit dike
- Strike and dip of joint filled with pegmatite dike
- Contact, showing dip; Dashed where uncertain or gradational, dotted where concealed
- Kjr: Rocklin pluton
- Kjpl: Penryn pluton
- met: Metamorphic rocks

GEOLOGIC MAP OF THE SOUTH HALF OF THE AUBURN 15-MINUTE QUADRANGLE AND DIAGRAM SHOWING JOINTS IN THE PENRYN AND ROCKLIN PLUTONS, CALIFORNIA