



A. Basement rocks of north-central United States and adjacent Canada

Platform quartzite omitted for clarity. Compiled by P.K. Sims, 1993, from following sources: Blackford and others, 1986; Houser, 1993; Houser and others, 1992; Houser and Karlstrom, 1992; Sims, 1980; Sims and others, 1991; Nelson and others, 1993.



B. Precambrian rocks exposed in Laramide uplifts, southeast Wyoming

- EXPLANATION**
- MIDDLE PROTEROZOIC**
- Ys Syenite of Laramie Mountains (1.43 Ga)
 - Yan Anorthosite of Laramie Mountains (1.43 Ga)
 - Ys Sherman Granite (1.44 Ga)
- EARLY PROTEROZOIC**
- Xp Granite of Haystack Range of Snyder (1980), Hartville uplift (1.72 Ga)
 - Xd Diorite of Twin Hills of Snyder (1980), Hartville uplift (1.74 Ga)
 - Xvg Metamorphosed volcanic and sedimentary rocks and mafic to felsic intrusive rocks of Colorado province (Central Plains orogen) (1.8-1.63 Ga)
 - Xm Mylonite and granite in Cheyenne belt, Medicine Bow Mountains
 - Xgb Metamorphosed mafic dikes (~2.0 Ga)
 - Xsp Metasedimentary rocks of Snowy Pass Supergroup, Sierra Madre and Medicine Bow Mountains
 - Xs Ferruginous schist, including iron-formation, metadolomite, and metabasalt (Whalen Group) of Hartville uplift
- ARCHEAN**
- Wg Granite of Laramie Mountains and granite gneiss of Hartville uplift (Late Archean)
 - Wvs Metavolcanic and metasedimentary rocks (Late Archean)
 - Agn Paragneiss and orthogneiss
- Contact**
- Contact—Approximately located; dashed where inferred
 - Fault—Movement not known
 - Thrust fault—Dashed where inferred; sawtooth on upper plate
 - Cheyenne belt
 - GFSZ Garrett-Fletcher Park-Cottonwood Park shear zone
 - RH Richeon Hills

- EXPLANATION**
- MIDDLE PROTEROZOIC**
- Yv Midcontinent rift system—Volcanic, plutonic, and sedimentary rocks (1.06-1.1 Ga)
 - Yan Syenite of Laramie Mountains (1.43 Ga)
 - Yan Anorthosite of Laramie Mountains (1.43 Ga)
 - Ys Sherman Granite of Laramie and Medicine Bow Mountains (1.44 Ga)
 - Ys Anorogenic granitoid rocks of Midcontinent region (1.45-1.55 Ga)
 - Yer Eastern rhyolite-granite terrane (1.48 Ga)
- EARLY PROTEROZOIC**
- Xm Mylonitic gneiss and granite in Cheyenne belt, Medicine Bow Mountains
 - Xvs Juvenile crust (1.63-1.8 Ga) of Central Plains orogen
 - Xv Juvenile crust (Wisconsin magmatic terranes, 1.83-1.9 Ga) of Penokean orogen; includes Late Archean basement (not differentiated) south of Eau Claire shear zone
 - Xg Continental margin metasedimentary and metavolcanic rocks (1.85-2.2 Ga) overlying Archean basement of Penokean orogen
 - Xs Continental margin metasedimentary and metavolcanic rocks (2.0-2.45 Ga) overlying Archean basement; includes successions in Lake Huron area (Huron Supergroup), Hartville uplift (Whalen Group), and Sierra Madre and Medicine Bow Mountains (Snowy Pass Supergroup)
- EARLY PROTEROZOIC AND ARCHEAN**
- XWvc Dominantly juvenile crust (central magnetic zone) of Trans-Hudson orogen; includes Archean rocks
 - XWvw Dominantly juvenile crust (western magnetic zone) of Trans-Hudson orogen; includes Archean rocks
 - XWb Superior-Churchill boundary zone—Supracrustal rocks on Archean basement
 - XWbh Black Hills domain—Migroccinal rocks (>2.0 Ga) and younger arc-related rocks on Archean basement

- ARCHEAN**
- Wg Wyoming Province
 - Wv Granite-tonalite (Late Archean)
 - Wm Dominantly metavolcanic rocks (Late Archean)
 - Ag Gneiss and amphibolite (Late to Early Archean)
 - Ar Archean rocks in subsurface; includes Early Proterozoic rocks
- SUPERIOR PROVINCE**
- Wvg Juvenile crust (2.68-2.75 Ga); includes, from south to north, Wawa subprovince, Quetico subprovince, and Wabigoon subprovince
 - Agv Gneiss and amphibolite intruded by granitic rocks (~2.6-2.7 Ga) of Minnesota River Valley subprovince; in Lake Huron area, south of Murray fault zone, may compose basement of unit Xs
- Contact**
- Contact—Approximately located; dashed where inferred
 - High-angle fault—Dashed where inferred
 - High-angle fault—Bar and ball on downthrown side
 - Thrust fault of Middle Proterozoic age—Dashed where inferred; sawtooth on upper plate
 - Thrust fault of Early Proterozoic age—Dashed where inferred; sawtooth on upper plate
 - Thrust fault of Late Archean age—Dashed where inferred; sawtooth on upper plate
- Other symbols:**
- CB Cheyenne belt
 - GLTZ Great Lakes tectonic zone
 - NACP North American Central Plains conductivity anomaly—Queried where uncertain
 - BH Black Hills uplift
 - Hu Hartville uplift
 - Outline of mountain range

GEOLOGIC-TECTONIC MAPS OF PRECAMBRIAN ROCKS, SHOWING BASEMENT ROCKS OF NORTH-CENTRAL UNITED STATES AND ADJACENT CANADA, AND ROCKS EXPOSED IN LARAMIDE UPLIFTS, SOUTHEAST WYOMING

Compiled by
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Base from U.S. Geological Survey Wyoming State base map, 1:500,000, 1984. Revised 1990. Compiled by P.K. Sims, 1993, from following sources: Chamberlain and others, in press; Duerksen and Houser, 1987; Geff and others, 1982; Houser and others, 1992; Sims and others, 1991.