Ancient Roots in the Basement

Land in Motion

You may not notice, but the ground beneath you is moving. At a snail’s pace, the position of the continents has changed throughout geologic history. For example, between 200 and 250 mya (mid-December on our calendar), the landmass including what is now Arizona was much closer to the equator than it is today. At the rate of less than an inch a year, it took our state more than 200 million years to get where it is now; and the movement continues.

Intense compression and squeezing produced the Santa Catalina Mountains’ oldest rocks, the basement foundation—Pinal Schist (A) and Oracle Granite (B), which you can see surrounding this panel. These rocks are the exposed roots of an ancient mountain range that stretched across much of what is now the American Southwest. The range was uplifted by colliding plates during the Precambrian, about 1800 mya ago (late summer on our calendar), and later eroded away to the schist and granite roots that remain today.

Pinal Schist, a shiny metamorphic rock present in small areas in the northern Catalinas, forms most of the Pinal Mountains south of Globe. It likely correlates to the famous Vishnu Schist found in the deepest gorges of the Grand Canyon. The pinkish Oracle Granite to the right of this panel is plutonic igneous rock formed 1450 mya (September) when magma intruded into the Schist. Near the town of Oracle, exposed Oracle Granite is visible at surface-level.

Lofty By Any Name

17th century explorer, missionary and cartographer, Father Kino is credited with naming Tucson’s most prominent mountain range in honor of Saint Catherine—Sierra de la Santa Catalina—which became, over time, the Santa Catalinas. To the Tohono O’odham, the native people of this region, the 9,000-foot peaks have always been Babad Do’ag or Frog Mountain.

Pre-Columbian pottery frog replica statue of Father Kino in Central Tucson