

- Holbrook, J., Medupe, R.T., and Urama, J., eds. (2008). *African Cultural Astronomy*. Berlin: Springer.
- King, D.A. (1993). *Astronomy in the Service of Islam*. Hampshire: Variorum.
- Selin, H., ed. (2000). *Astronomy across Cultures*. Dordrecht: Kluwer.
- Vaiškūnas, J., ed. (2008). *Astronomy and Cosmology in Folk Traditions and Cultural Heritage*. Klaipėda: Klaipėda University Press (Archaeologia Baltica 10).
- Zedda, M. and Belmonte, J.A., eds. (2007). *Light and Shadows in Cultural Astronomy*. Isili, Sardinia: Associazione Archeofila Sarda.

Case Study 4.1: Navajo Star Ceilings, USA

Stephen McCluskey and Von Del Chamberlain

Presentation and analysis of the sites

Geographical position: ‘Four corners’ region, States of New Mexico, Arizona, Colorado and Utah, USA.

Location: Latitude 35° 5′ to 37° 17′ N, longitude 109° 36′ to 105° 56′ W. Elevation c. 1500m to 2500m above mean sea level.

General description: Star ceilings are scattered throughout the Navajo region. They consist of clusters of stars painted or stamped on the overhanging ceilings of natural rock shelters. Each star in the pattern is depicted as an equal-armed cross, in black, red, or white or occasionally in orange, yellow or green. These characteristics distinguish star ceilings from depictions of stars on vertical rock faces and from star images incised or drilled into the rock. The star ceilings vary in detail from a single star to a cave ceiling filled with the imprints of several hundred stars.

Inventory of the remains: Eighty sites have been identified so far: about 66 percent of these are concentrated in the Canyon de Chelly National Monument, 15 percent in the original *Diné* heartland, and the remainder widely scattered throughout the four-corners region.

History of the sites: The Navajo (or *Diné*) were originally a Southern Athapaskan—or Apachean—people and are relative newcomers to their current homeland in the four corners region, where the states of New Mexico, Arizona, Utah, and Colorado meet. The exact date of their arrival in this region is uncertain, with scholarly estimates ranging between 1000 and 1525 AD. During this period of settlement the Navajo interacted with their puebloan neighbours and came to exchange many traditions with them. By the 16th century, Spanish explorers had already described them as a semi-sedentary people who hunted and raised maize and other crops in the *Diné* region south of the San Juan River in what is now Northern New Mexico. In addition to maize-based agriculture, they acquired from the pueblos a cosmology based on the association of colours with the four directions, and particularly with sacred mountains at the cardinal points, while the Navajo are said to have contributed their characteristic depiction of four-pointed stars to their puebloan neighbours.

Cultural and symbolic dimension: Star ceilings document the Navajo interest in the stars. Navajo astronomy differs substantially from that of their puebloan neighbours: unlike the puebloan peoples, who developed an astronomy centred on observations of the changing places of sunrise and sunset against the local horizon, Navajo astronomy was primarily stellar, marking the seasons by the changing appearances of the starry sky at different times of the year. The Navajo thus developed an extensive knowledge of constellations and commemorated these stellar patterns in mythology, ritual, and a wide range of ceremonial artefacts.

Despite early attempts to identify specific constellations in these star ceilings, subsequent investigations have found no convincing evidence that actual star patterns are displayed in the star ceilings. In other words, these stellar patterns do not depict specific identifiable Navajo constellations but are representations of a generic starry sky.

Present site management

Present use: These sites are not generally recognized as visitor attractions.

Protection: Those sites on tribal and federal lands are protected by the Antiquities Act of 1906 (16 USC, §431–433), the Archeological and Historic Preservation Act (16 USC, §469–469c) and Federal Regulations on the Protection of Archaeological Resources (43 CFR 7); sites on Navajo lands are additionally protected by the Navajo Nation Cultural Resources Protection Act (19 NNC 1001 *et seq.*); sites within the National Parks and Monuments are further protected by the Park Service’s Cultural Resource Management Guideline (NPS 28); and sites on private lands are protected by the National Historic Preservation Act of 1966 (16 USC, §470 *et seq.*).

State of conservation: Most of the sites are intact and well-preserved, sometimes because of their isolated location and limited public knowledge of them, others because they are physically located in National Parks and Monuments.

Main threats or potential threats to the sites: Because of the simple nature of their iconography, they have not been as threatened by collectors as have more artistically attractive rock art. Nonetheless, some isolated sites have been vandalized by graffiti and effort is needed to further preserve them.

Management: The star ceilings are on land under many different and overlapping jurisdictions. The vast majority of them are on Navajo tribal lands; many are in National Parks and Monuments; others are on Federal Lands (chiefly under the Bureau of Land Management), and a few are on private lands.

Additional bibliography

Chamberlain Von Del and Polly Schaafsma (2005). “Origin and meaning of Navajo star ceilings”, in Von Del Chamberlain, John B. Carlson, and M. Jane Young (eds), *Songs from the Sky: Indigenous Astronomical and Cosmological Traditions of the World*, pp. 80–98. Bognor Regis: Ocarina Books.

Haile, Berard (1947). *Starlore among the Navajo*. Santa Fe: Museum of Navajo Ceremonial Art.

Williamson, Ray A. (1984). *Living the Sky: The Cosmos of the American Indian*. Boston: Houghton Mifflin Co.

Young, M. Jane. (2005). “Astronomy in Pueblo and Navajo world views”, in Von Del Chamberlain, John B. Carlson, and M. Jane Young (eds), *Songs from the Sky: Indigenous Astronomical and Cosmological Traditions of the World*, pp. 49–64. Bognor Regis: Ocarina Books.

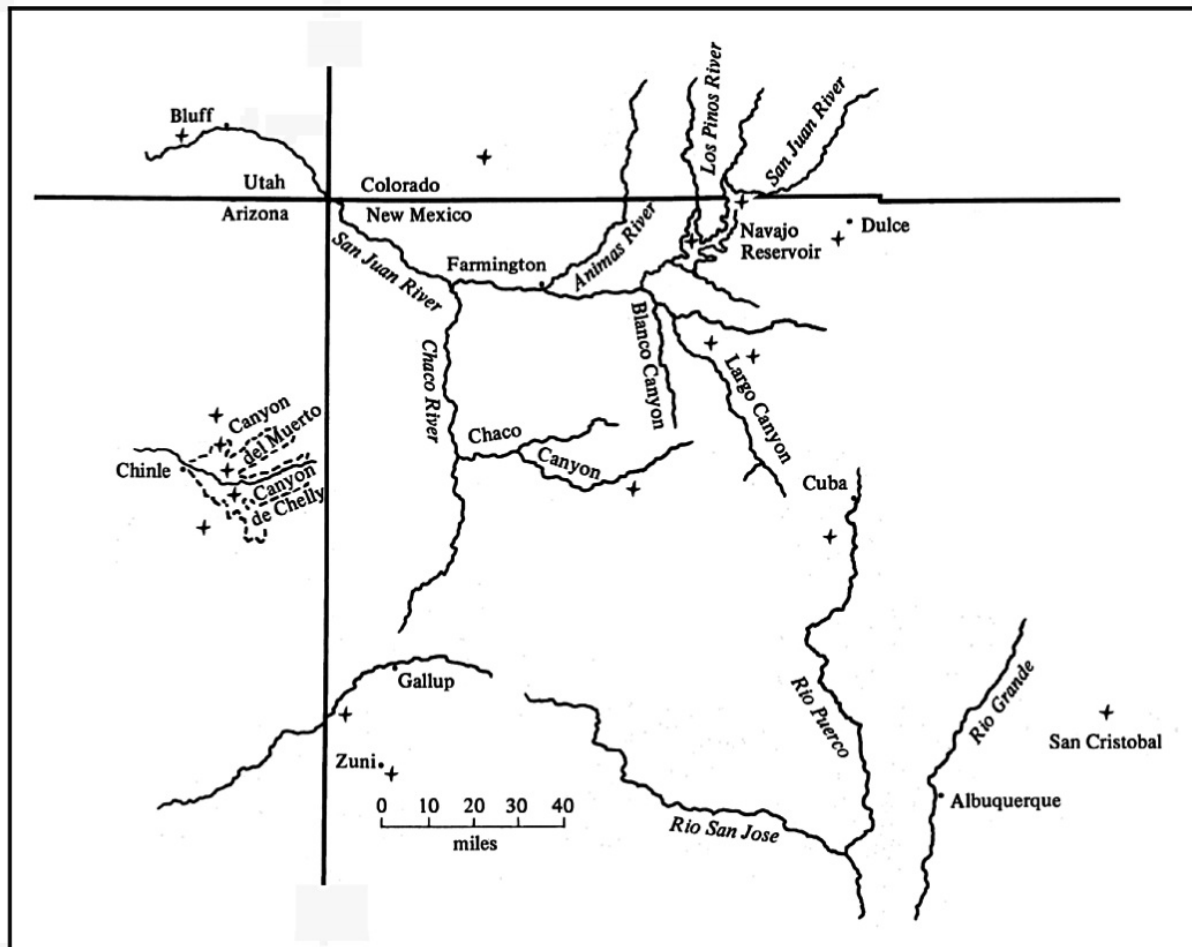


Fig. 4.1.1. The geographical distribution of star ceiling sites.

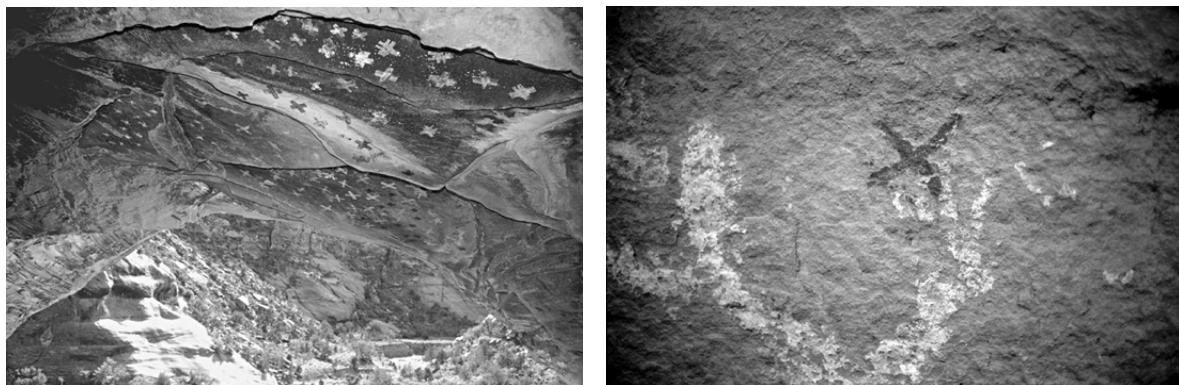


Fig. 4.1.2. **Left:** Many Stars Site; Middle Trail Canyon. **Right:** Single Star, Red Star Ceiling; Slim Canyon. Photographs © Von Del Chamberlain.