

Cherilynn  
Morrow  
Consultant - Southwest Research Institute  
Oral

NASA approved the 5-year PUNCH Outreach Program (POP) in late January 2021. The Heliophysics Division has publicly praised the submitted plan as a model for mission-embedded outreach. Parker Solar Probe is leveraging PUNCH Outreach by contributing resources for a short planetarium film and for the development of tactile representations of NASA heliophysics data. These and other enduring POP products and events will involve the close collaboration of the PUNCH and Parker outreach teams with mission scientists.

The POP team welcomes the participation of other heliophysics missions and scientists in its Ancient and Modern Sun-watching theme. We will use the milestones and discoveries of the missions, the solar eclipses in 2023 and 2024 during a time of high solar activity, and ancient solar observatories to motivate public engagement in multicultural, arts-integrated opportunities for learning about NASA-related science, technology, engineering, and mathematics (STEM).

The POP motto is “shining a new light on diverse views of the Sun”, be they scientific, artistic, cross-cultural, historic or the result of first-person observations. The program collaborates with diverse partners to engage populations that are currently underrepresented in STEM fields. The POP team is working to benefit and learn from Native American and Hispanic youth and their families, Girl Scouts pursuing STEM-related patches and badges, and blind or visually impaired learners.

PUNCH Outreach draws inspiration from Chaco Canyon, a World Heritage site in the New Mexico high desert where examples of age-old Sun-watching practices are abundant and where the 1097 total solar eclipse may have been recorded as rock art by Ancestral Puebloan people. Independent evidence suggests that this eclipse also occurred during a solar maximum, which may explain the curlicued lines emanating from the disc of the petroglyph.

Given the possible depiction of an active solar corona more than 700 years prior to the swirls in hand drawings of the 1860 eclipse, the Chaco petroglyph offers an extraordinary portal between ancient observations and contemporary NASA exploration of the Sun’s outer atmosphere. POP products and events will invite modern Sun-watchers of eclipses, sunrises, sunsets, and telescopic views to commune across time, space, and culture with our Sun-watching ancestors as well as with NASA solar scientists exploring our nearest star.

During June, the POP team deployed the first two expeditions to collect photography at an ancient Sun-watching site in Chaco Canyon. This presentation will include preliminary results.

PUNCH Outreach is led by the Southwest Research Institute in collaboration with a consortium of five planetariums and science centers in four states, plus other multicultural partners in the southwestern United States. Coordination with NASA Heliophysics Communications and other NASA-sponsored STEM engagement programs helps to ensure national impact.

Presentation file

[morrow-punch2-presentation.pdf](#)

YouTube link

<https://youtu.be/69d9R8tz82k>

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