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RECENT ROCK ART RESEARCH IN NORTH AMERICA

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Rock art in North America is the focus of a variety of projects ranging from locating and recording for purposes of expanding the database of known sites to in-depth analyses contributing to our understanding of the many past and present cultures of the United States and Canada. Presentations of different projects occurring in the region provide insights for an informed and inclusive understanding of regional cultures and provide comparable data for current directions in recording and preservation. The many aspects of rock art research in North America showcase the variety of work occurring on this site type and the progress being made in conservation, preservation, and interpretation.

Circles in Northern Plains Rock Art, USA

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Keywords: USA, circles, shields, sacred, management

Among contemporary Native American Indian tribes, the circle is considered a sacred shape, even in utilitarian arrangements like tipi rings or fire hearths. In regional rock art, circles seldom occur as stand-alone images but usually are part of a complex arrangement even though the referent may seem utilitarian, like a shield or drum. Amalgamation of secular and sacred concepts is considered regularly by cultural resource managers and researchers, and our examination of this shape within rock art of the Northern Plains provides support for how the circle was elevated to a lofty position that regional cultures retain today. The evolution of the role of the circle in rock art, its changes in meaning and function can be inferred from their distribution, incorporation into more complex images, relation to other panel components, and ethnographic reports of the circle's place within various cultural groups. This demonstrates their place within society, providing evidence for beliefs and rituals, which helps explain how ancient beliefs are incorporated into modern cultures that are not directly associated with the people who originally made the circles and how those incorporations affect management considerations. Thus, understanding historical changes in meaning and use of the circle motif, helps managers deal with variability in the concept of sacredness of circular shapes throughout the archeological record.



Fig. 1 - Circular shields and anthropomorphs in northwestern Wyoming, USA. (Photo John Greer)

DStretch documentation of a spectacular polychrome rockshelter

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Keywords: DStretch, rock art, pictographs, enhancement, Great Mural, Baja California Sur

DStretch is a rock art enhancement program used by researchers worldwide. It contains many different enhancements derived from the decorrelation stretch algorithm. The variety of enhancements gives DStretch unique versatility as will be shown in this presentation which documents the beautiful rockshelter El Chavalito in Baja California Sur, Mexico. This rockshelter contains hundreds of paintings belonging to the Great Mural tradition. The paintings are mostly in reds, but yellow, white, and black pigments are also used. The background rock varies from a light colored, mottled volcanic breccia to a light brown tuff covered in places with dark black organic stains and bright white mineral stains. The paint condition varies from faded and nearly invisible to bright. These conditions make documenting the paintings a challenge and give an excellent demonstration of DStretch techniques. The Great Mural art of the Sierra de Guadalupe is less well known and less studied than that of the Sierra de San Francisco to the north, but is in fact the area of origin of the Great Mural tradition. El Chavalito is an important regional center near the southern limit of this tradition.



Fig.1 - El Chavalito panel before enhancement. (photo Jon Harman)

Fig.2 - El Chavalito panel after DStretch YRE enhancement. (photo Jon Harman)

Vertical Series - New Discoveries and Distribution

The Vertical Series rock art tradition consists of abstract geometric shapes repeated in rows or columns. It is found from western South Dakota, northern Wyoming, and up through Montana into southern Alberta. However, a large gap has existed between known sites around Calgary, Alberta and those below Great Falls, Montana. Recent discoveries have filled this gap, giving a fuller picture of the tradition's visual vocabulary and distribution. Dating estimates for these images, has ranged from the Archaic to the Historic period. Analyzing superimpositions with other associated rock art traditions can narrow this likely timeframe and may indicate Vertical Series' geographic dissemination over time across the northern plains.

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Keywords: USA, Northern Plains, Vertical Series Tradition, dating

The Eagle Creek Canyon Horses: A Typology of Calling Card Petroglyph Sites

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Keywords: USA, Northern
Plains, biography, horses

Five petroglyph horses incised at Eagle Creek Canyon in north-central Montana tell a story of historic period Crow and Blackfoot horse raiding. Located along the major war trail traversing north-south through the high Plains of Montana, Eagle Creek Canyon was originally described by Stu Conner in the late 1980s, but his analysis of the imagery there was handicapped by the paucity of data available to him about horses in this region. In the ensuing 30 years hundreds more rock art horses have been described so that we now have well defined styles for both Crow and Blackfoot artists. This new information allows us to develop a much deeper understanding of this site.

For the Crow, the Eagle Creek Canyon petroglyphs were a calling card taunting their Blackfoot rivals' that they had entered their homeland to steal horses and count coups. Once found, however, a Blackfoot artist canceled out one of these Crow "taunts" with his own horse, undoubtedly stolen from the Crows. Comparing details of the images at this calling card site to those at other similar sites, we can now begin to formulate a typology of calling card petroglyphs and better understand how they functioned and when they were made.

Hole in the Wall, Wyoming

Three major rock art sites, adjacent to one another, in the Hole in the Wall region west of Kaycee, Wyoming, exhibit more than 75 stenciled hands and arms. This large concentration of stenciled hands is highly unusual for Wyoming. In addition to the hands, the sites include large bears, masks, and other images that are not found at other regional sites. These sites suggest influence from outsiders or actual occupation of the Wyoming area, perhaps as a migration or part of a trading or exchange system.

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Keywords: USA, Northern
Plains, stenciled hands,
migration, trading, exchange

To Depict or not to Depict: Paleoamericans and Their Encounter with an “Animal Landscape”

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Keywords: peopling of the Americas, Pleistocene-Holocene Transition paleoart, abstract-geometric markings, extinct megafauna depictions, human universal of ratification

Numerous issues regarding the peopling of the Americas remain contentious. Completely uncontroversial, however, is the accepted fact that arriving Paleoamericans were anatomically and cognitively *Homo sapiens*. They set foot on a continent empty of humans but teeming with animals that has been described as an “animal landscape” similar to Africa’s Serengeti Plain. One would expect these early colonizers to have left behind, like their Paleolithic counterparts in Europe, naturalistic images of the large megafauna with which they shared the continent. Instead, they chose to create abstract-geometric designs as is amply evident from surviving parietal and mobiliary art. For unknown reasons, nearly all the species that died out during the Pleistocene-Holocene Transition are absent from the early settlers’ iconographic “meme pool.” Still, several tantalizing exceptions are currently known. They include, in North America, two realistic portrayals of *Mammuthus columbi* (Columbian mammoth) in Utah, twinned engravings of *Mammot americanum* (mastodon) in Ohio, and the plausible depiction of a *Bison antiquus* (Ancient bison) in Utah. South America, in turn, has yielded evidence for bona fide paleoart identifiable as extinct *Glyptodon* (giant armadillo) and *Hippidion* (early horse).

Western Message Petroglyphs: Esoteric Rock Art Found in Association with Historic Trails, Town Sites, and Historic Quarries and Mines

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Keywords: Western Message
Petroglyphs, Ojibwa/
Sioux pictographic writing,
esoterica, historic rock art

Dispersed across a wide region of the Western United States, Western Message Petroglyph sites are remarkably homogenous and recognizable based on their image content, style of execution, geographic contexts, and landscape settings. Our investigation of more than thirty WMP sites has produced a compelling number of evidential strands that has led us to propose that these petroglyphs date to the historic era of Western Expansion (1847 - 1903) and are of Euro American manufacture, despite their incorporation of a late form of Native American pictographic writing. Variations can be recognized within the classic template for these sites, most notably in some California locations where the classic form loses its linear structure. In this presentation we highlight and contrast examples of classic Western Message Petroglyph panels with variant forms found in California.

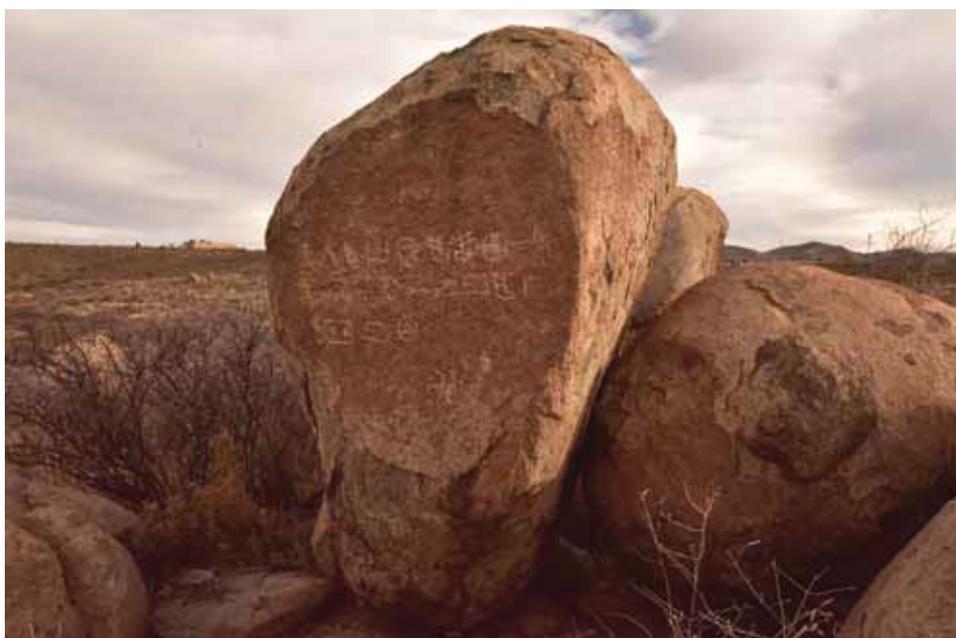


Fig.1 - Berkeley, California. (photo
Leigh Marymor)

Fig.2 - Tombstone, Arizona. (photo
Leigh Marymor)

Documenting and interpreting rock art in the Canyons of the Ancients National Monument, Colorado, USA

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Keywords: Mesa Verde, Sand
Canyon, Pueblo rock art,
Pueblo oral tradition

Since 2011 the Sand Canyon-Castle Rock Community Archaeological Project, the first Polish archaeological project in the US, has been conducted in the Mesa Verde region of southwestern Colorado. The project focuses on an analysis of the socio-cultural changes that took place in Ancient Pueblo culture in the Lower Sand Canyon area, Montezuma County and includes surveys, limited excavations and documentation of rock art and murals from the area. In addition to the main research area, we have started photogrammetry and 3D scanning of rock art in nearby Sandstone Canyon. All of these canyons are part of the Canyons of the Ancients National Monument. The rock art from the area includes ancient Pueblo rock art as well as historic petroglyphs (mainly of the Navajos and Ute), depicting geometric motifs, probably astronomical motifs, clan symbols, shamans, warriors, and extended scenes that depict fighting and the hunting of large animals, mostly deer and bison. Almost every panel of the rock art bears traces of modern graffiti or vandalism such as initials and names. In 2016 and 2017 we collaborated with modern Pueblo people from the Hopi tribe in Arizona to better understand and interpret the rock art and its location within the landscape.

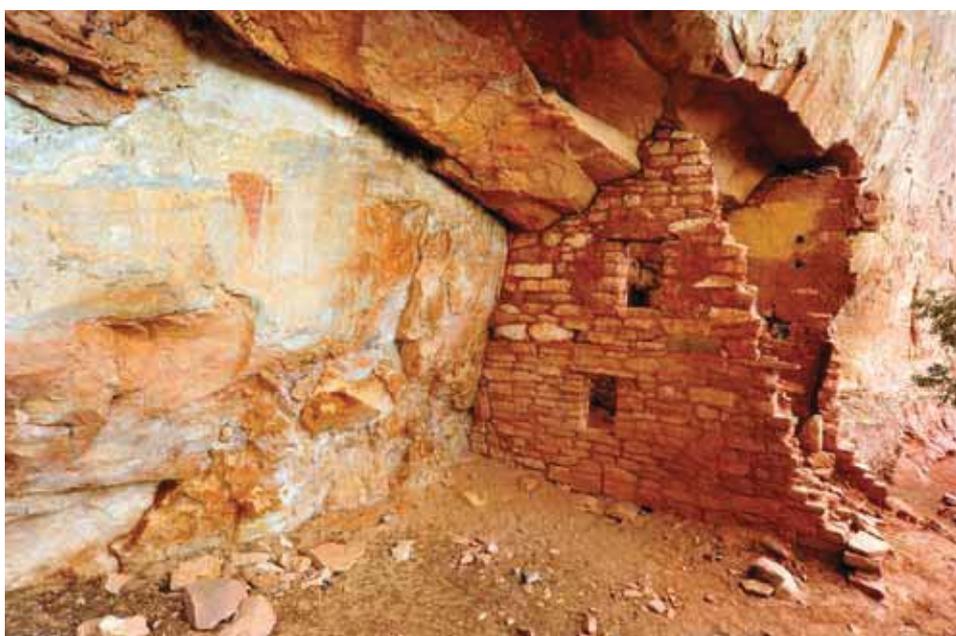


Fig. 1 - Part of the Site 5MT264 (The Gallery) in East Fork of Rock Creek Canyon, Colorado. (photo R. Staboński, © Sand Canyon-Castle Rock Community Archaeological Project)

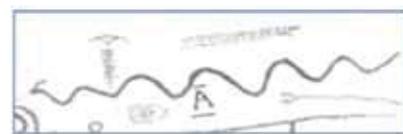
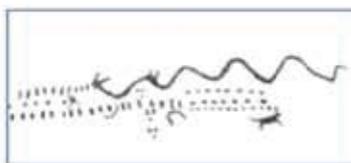
Fig. 2 - Panel with petroglyphs at the Site 5MT13288 (Painted Hand Petroglyph Panel) in Sandstone Canyon. (photo R. Staboński, © Sand Canyon-Castle Rock Community Archaeological Project)

The Mu:kwitsi/ Hopi (Fremont) abandonment and Numic Immigrants into Nine Mile Canyon, Utah, as Depicted in the Rock Art

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Keywords: Fremont, Numic,
Tanoan, Hopi, cultural
diagnostics

Results of linguistic and mtDNA analysis of the Fremont people (1000 – 1300 A.D.) show a mixture of Pre-Hopi (Uto-Aztecan) and Tanoan (Jemez) ancestry. Oral traditions of Paiute and Ute name the Fremont people, as the Mu:kwitsi/Hopi (Shaul 2014). Analysis of Fremont rock art, supports this with early depictions of Awanyu, the Tanoan plumed serpent and to Hopi with male hair styles, garden plots and Hopi creation deities. Climate change (A D 1100-1300) to cooler dryer seasons favored “Travelers” strategies over agricultural subsistence, (Simms 2008). Rock art in 9mile Canyon portrays the arrival of Numic immigrants with large burden baskets for gathering wild seeds (cheno/ams), and suggests displacement of Fremont (Mu:kwitsi/Hopi) distinguished by their Hopi hairstyle and hock-leg moccasins fighting Numic (Paiute/Utes) distinguished by their footwear and hairstyles. Cultural diagnostics include directionality (left-to-right sun-wise direction) specific to Numic language speakers, while Hopi and Tanoan cultural preference is a right-to-left directionality



Hidden Desert Treasures: A Collaborative Effort to Aid the Petrified Forest National Park Understand and Preserve Its Rock Art

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Keywords: Petrified Forest National Park, Conservation, Public Policy and Rock Art Sites, Indigenous North American Cultures, Public/Private Sector Cooperation, Volunteerism

Fig.1 - Petrified Forest National Park, USA. (photo John L. Pitts, © 2017)
Fig.2 - Petrified Forest National Park, USA. (photo John L. Pitts, © 2017)

As a result of a 2005 Congressional mandate to double the size of the Petrified Forest National Park, the Park faced the enormous task of surveying, recording and evaluating new archaeological sites to determine how to preserve them for public use. Lacking the resources to record the extensive new rock art sites, a team of four avocational rock art enthusiasts volunteered to assist the Park in meeting its urgent goals. Starting in 2015, this team, known as the JPRARA (JP Rock Art Research Associates) has worked closely with the Park Superintendent and Park Archaeologist to record priority sites. Information gathered on five major sites has enhanced the basic knowledge of ancient cultures (Pueblo, Hopi, Navajo,) provided a basis for comparative studies on rock art styles, and guided the Park's policies in conserving cultural resources. Already, information resulting from this field research and final reports on each site has led to a deeper understanding of the ancient peoples who lived in the region extending back approximately 3,000 years.



The Utility of 3D Modeling in the Documentation and Preservation of Illinois Rock Art Sites

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The incorporation of 3D terrain and object models for recording and preserving cultural heritage is a new addition to our digital archaeological tool-kits. Today, photogrammetric survey and recording techniques have the potential to transform the way we view and study the past in several important ways. However, the utility of using 3D models as a means of studying changes over time, a logical next-step in the application of this remarkable tool, remains underexplored. In southern Illinois, fragile rock art sites are among the few monuments that attest to the region's rich cultural past. Sadly, many are rapidly deteriorating due to erosion and vandalism. The Evans Farm Track Rock, Fountain Bluff and Millstone Bluff sites, in particular, have been heavily impacted. The degree to which these sites have transformed, and the effectiveness of our 3D models to study changes that have occurred in recent decades is the topic of the current work. Here, we discuss the utility of using 3D rock art site models as a way to not only preserve remnants of cultural heritage and identify artistic compositions that may have been overlooked, but also as a tool for studying impacts of factors such as erosion over the past several decades.

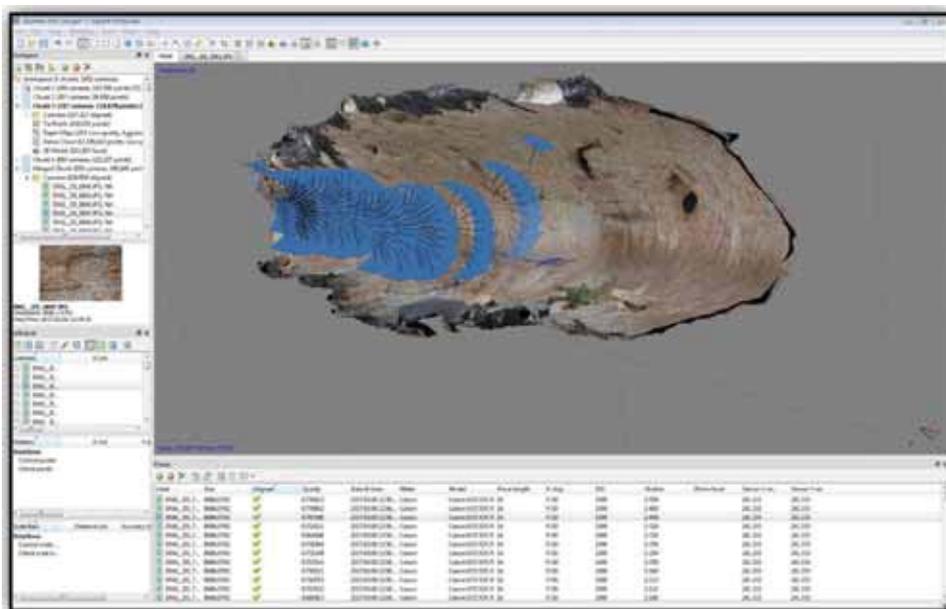
Keywords: USA, 3-D Modeling, site documentation

Shumla's Alexandria Project: Baseline Documentation in the Lower Pecos, Texas

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Keywords: rock art
documentation,
photogrammetry, 3D models,
GigaPan, preservation, Lower
Pecos, Texas

The Lower Pecos Canyonlands of southwest Texas and northern Mexico houses some of the most complex and compositionally intricate prehistoric rock art in the world. Presently, there are over 300 known rock art sites in Val Verde County Texas, with a vast majority not being revisited since they received their site designation 30 to 50 years ago. In August 2017, Shumla Archaeological Research & Education Center launched the Alexandria Project, a three-year baseline documentation initiative designed to gather an extensive dataset from all known sites. Data such as accurate site locations, high resolution panoramic images, 3D models created by Structure from Motion, and context photography will be collected in the field. New, amended, updated, and revised TexSite and Shumla Rock Art Site Forms will also be completed and submitted to our designated repository. This vast and multi-faceted data set will open areas for future research including rock art distribution and directionality patterns, motif attribute studies, landscape archaeology, and conservation assessments. It will also digitally preserve into perpetuity the full rock art assemblage for an entire archaeological region.



Rock art landscapes of the Canadian Maritimes

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Keywords: Canadian Maritimes, Maritime Algonquian, Mi'kmaq, colonialism, relational ontology

Ongoing investigation of the Algonquian rock art of the Canadian Maritimes examines a rich body of petroglyphs that has the potential to contribute to current understandings of Indigenous cultural life following European contact. Building on a program of survey and conservation initiatives undertaken during the 1970s-80s, the corpus is revisited through the lens of landscape archaeology articulating with theoretical positions emerging from the ontological turn in archaeological discourse. Comparative analysis of the technical, iconographic and narrative content of the petroglyphs is used to align the corpus with neighboring Algonquian rock art traditions, both precontact and post-contact, known from northeastern North America. Computational photography, principally Highlight Reflectance Transformation Imaging and photogrammetry, is employed to reveal new details and identify internal chronologies in the corpus, and the multi-vocality of the rock art is explored in collaboration with the First Nations of the region.

Exploring Variability within the Interior Line Petroglyph Style

Interior Line Style petroglyphs in western Wyoming (USA) have imagery characterized by large decorated body anthropomorphs that depict spirits. Major concentrations of Interior Line petroglyphs occur at sacred places used by the Eastern Shoshone tribe. Additional smaller sites are widely scattered. Within the region of the style, the range of variability in stylistic details contributes to a feeling that the style is not fully defined or that some sites have atypical versions of the style. This preliminary analysis uses statistical techniques to help define the nature of the style in what appears to be its core at two important sacred places, followed by examining the differences between the core area and outlying sites.

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Keywords: North America, Interior Line Style, open air petroglyphs, statistical analyses



Fig. 1 - Interior Line Style Anthropomorph. (photo Alice M. Tratebas)

Fig. 2 - Interior Line Style Owl. (photo Alice M. Tratebas)

The Aurignacian Influence on American Rock Art

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**Keywords: USA, France,
natural rock forms,
documentation**

Elements of rock art are often more than pigment and incisions. The natural form of the rock can complete pictographic and petroglyphic shapes and seem to inform the placement of certain designs. Presenting the complex interactions of natural and human-made elements in rock art has long been a challenge for researchers. Results from the use of these techniques at rock art sites from the Americas and how the documentation techniques being developed in Europe are influencing these efforts will be presented. A comparison of the challenges found in recording Aurignacian aged etchings in Southern France to rock art sites in western North America will be examined.