from portrait to landscape where the calendar is reproduced and annotated, apparently to present the lengthwise ledger pages in reasonable size. Text rotation sets off the original material and yields a book that can be shelved more nicely than one in full landscape format, but the volume is uncomfortable to handle. It also seemed that some summary comments, even if moved from the introduction, would give the cover-to-cover reader more of a sense of completion if added after the calendar proper.

Useful appendices include a guide to oft-mangled Kiowa names and terms by tribe member and anthropologist Gus Palmer Jr., using the orthography developed by another tribe member, Parker McKenzie, in the 1930s; the texts of the Little Bluff and Hauvahte calendars, which the author had to render from old handwritten notes; and a list of thirty-five other Kiowa calendars and related records.

One Hundred Summers remains an important exercise in method as well as a fascinating excursion into the hearts and minds of ancestral Kiowas. It joins not only the author's prior works but also other recent books on Kiowa song and geography in providing a renewed understanding of Kiowa culture.

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Thunder and Herds: Rock Art of the High Plains. By Lawrence L. Loendorf. Walnut Creek, CA: Left Coast Press, 2008. 256 pages. $89.00 cloth; $65.00 paper.

Located in the rain shadows of the Rocky Mountains to their west, the High Plains of southeastern Colorado and northeastern New Mexico contain a great number and variety of petroglyphs (engraved, incised, and pecked rock-art motifs) and pictographs (painted and drawn rock-art motifs). In prehistoric and early historic times, vast numbers of bison, pronghorn, deer, and elk roamed these high and level plains, a landscape also characterized by occasional but violent thunderstorms. The thundering sound and dust created by the hooves of a bison herd or pronghorn antelope running away from Indian hunters on the ground below must have been a small-scale version of the thundering sound and dark clouds approaching the Indians from the skies above; the natural storms that turned hunters into virtual prey must have been a cogent reminder of an embedded existence.

A common element during hunt and storm were the slivers of sunlight and flashes of lightning occasionally revealing features otherwise hidden within the enveloping chaos of dust and rain. Those who found themselves in the midst of a hunt or a storm were nonetheless reasonably able to interpret unfolding events in between flashes of light by recalling related and more complete scenarios seen and experienced in full sunlight. Art on the rocks and archaeological remains in the dirt that have survived the ravages of people and nature through time are snippets of the past that are brought to light through survey, excavation, and recording. No matter how good the

preservation or how thorough the fieldwork, the archaeological and rock-art record almost always is fragmentary and can only be interpreted with a reasonable degree of confidence when compared with related and more complete instances in the physical "present" and the ethnohistoric record. In his book on the rock art of the High Plains, Loendorf rightly realizes that interpretation of a fragmentary material record is only reliable when viewed in reference to rigorous physical analyses and relevant ethnographies.

Taking advantage of the microstratigraphic layers within rock-art panels, natural and cultural, Loendorf analyzes and interprets the panels as small-scale versions of conventional dirt archaeological sites. Whenever possible he also tries to match what is on the rock with what is in the ground immediately below. Loendorf's approach is one in which time-space systematics are important in order to develop a better understanding of the entire archaeological record, from the microscale of rock-art motif through sites and artifact assemblages to the macroscale of the surrounding landscapes and cultures.

As in the case with researching archaeological sites, Loendorf maintains it is best for a researcher to visit a rock-art site in person. From an information-gathering perspective, this is advantageous because walking to and from any rock-art site gives a researcher a more realistic measure of distance, effort, view sheds, physical thresholds, scale, viewing position, and surrounding features, plants, and animals. Loendorf's *Thunder and Herds* admirably succeeds to recreate for the reader a grounded and three-dimensional encounter with the landscape and the numerous rock-art and dirt sites within.

It is among the edges of the flatlands, where the plains change into rock-lined canyons or are intersected by intrusive volcanic rocks, that animals and people tended to find plant food, shelter, and often each other. It is near or at these transitional, or anomalous, locales that most rock-art sites are to be found too. By first getting a handle on rock-art chronology and motif type, Loendorf established a base from which to evaluate continuity and change in the choice of rock-art locales through time. With the aid of cation ratio dating (ratio of immobile titanium to mobile calcium and potassium), weathering-rind organic dating (direct accelerator mass spectrometry radiocarbon assaying of microorganics trapped below surface accretions), and varnish microlamination dating (manganese-rich layers matching wet periods) conducted by Ron Dorn, Loendorf was able to obtain at least some direct dates of petroglyphs. Nonetheless, as these direct dates are still experimental, Loendorf had to confirm, modify, or even reject the assays on the grounds of other dating results, particularly conventional radiocarbon dates of wood charcoal from soil layers immediately above buried rock art.

Loendorf uses seriation to arrange curvilinear shapes, quadrupeds, and anthropomorphs in a relative chronological order. By using dated rock-art sites as benchmarks for the relative percentages of these motif types, curvilinear shapes appear to be more prevalent at Middle Archaic sites (ca. 4050–1050 BC), with quadrupeds becoming prevalent at Late Archaic sites (ca. 1050 BC–AD 100), and anthropomorphs finally appearing at Developmental period sites (ca. 100–1050).

Several dating techniques suggest that the individual pecked curvilinear designs at the Glorieta Mesa site in New Mexico are terminal Early Archaic in age, or roughly five thousand years old. Probably due to drier conditions during this period, the Indians chose to inhabit and peck sites at higher elevations, closer to permanent water sources. Individual curvilinear motifs of the Early Archaic became interconnected during the Middle Archaic, and by the Late Archaic interconnected curvilinear designs became rectilinear.

Cation ratio assays of so-called Purgatoire Pecked I petroglyphs from the Zookeeper site, suggest that ungulate, anthropomorph, and human footprint motifs from this site and similar panels in the region date to the Developmental period. Supported by conventional radiocarbon dates of wood charcoal from deposits in the vicinity of Zookeeper and other rock-art panels with a similar array of motifs, the dates show that Purgatoire Pecked I petroglyphs are contemporary with the appearance of semipermanent open-air village sites, the bow and arrow, and even a few cord-marked ceramics in the wider region. The producers of Purgatoire Pecked I petroglyphs seem to have avoided Archaic period rock-art panels.

The comparatively dynamic Purgatoire Pecked II petroglyphs and pictographs date to the so-called Apishapa archaeological phase of the Diversification period (ca. 1050–1450), thought to be representing early Caddoan-speaking communities on the landscape, such as ancestral Pawnee and Wichita. Painted pictographs appear among pecked petroglyphs on certain panels during this period. Judging from a variety of parallel ethnographic instances, impact fractures on certain ungulate paintings can be the result of hunting magic rituals. Generally speaking, activities such as net hunting and dancing are depicted in Purgatoire II art. Stone-walled circles with petroglyphs of dancing figures could represent dancing areas, which in the ethnographic record have been found to be associated with spirit beings and/or everyday hunters.

Loendorf suggests that hunt shamans used cultural and natural features as "calling stations" for meditation and prayer in order to attract game into nearby natural funnel-shaped terrain that was suitable for ambushes by hunters. These cultural and natural features ranged in age from Early Archaic hunting pits lined by petroglyph boulders at Piñon Canyon, through natural alcoves with Developmental period petroglyphs against the rear wall of the Zookeeper site, and boulders with Diversification period pronghorn depictions next to a pronghorn antelope driveline at the Corral site, to multiple painted shelters along the edges of the Game Drive narrows. According to ethnographic information, pictographs of raptors associated with the hunting scenes most likely represent hunting shamans that took on the shapes of their spirit helpers. The pecked and painted hunting scenes most probably had magical and pedagogical roles, bearing in mind that spiritual and practical matters are intertwined among hunters and gatherers.

Based on documented early historic accounts and associated archaeological evidence, horned anthropomorphs and ungulates, particularly bison that are done in stipple-pecking and pecked outlines, most probably represent the settling of the Athapaskan-speaking Apache on the High Plains by AD 1675.

This age estimation is supported by direct cation-ratio assays on petroglyphs, diagnostic sinew-backed bow motifs, and charcoal and diagnostic artifacts from associated deposits.

Protohistoric Apache stone structures and petroglyphs on volcanic dikes are probably associated with lightning *gan* spirit beings mentioned in ethnographic accounts. Loendorf supports this association by having recovered and identified elevated levels of cattail pollen from soil deposits below the Stone Structure site, bearing in mind that this pollen is deliberately scattered by Apache shamans in order to stop storms or attract game. Reminiscent of rock-art sites that date back to the Early Archaic on the High Plains, the protohistoric Apache rock-art sites associated with walled structures are variants of "calling stations" for invoking hunting spirit helpers.

Comparatively large pecked and painted depictions of ungulates, bears, and bird-like figures probably date to the post–AD 1725 Historic period, dominated by mounted Comanche nomads from the northwest. Peckings, incisions, paintings, and drawings of horses, riders, and guns also belong to this period.

Although the rock art, archaeology, and ethnography of the High Plains reveal certain commonalities with neighboring areas and even more distant regions, the ancient and embedded relationship with game drives appears to delineate this region, even though hunting-related rock art also occurs on the distant Columbia Plateau. Instead of being associated with life-crisis rituals (for example, northern Great Basin), rain making (for example, Coso Range), raiding (for example, Northern Plains), or fertility deities (for example, Southern Appalachians), High Plains rock art, for the most part, is directly involved, spatially and conceptually, with the capture of fleet-footed, thundering herds. Knowing the variations in rock-art traditions and associated socioeconomic significances across the United States, it will be foolish to claim that if you have seen one kind of shamanic rock art you have seen them all.

The massive volunteer involvement in Loendorf's research is impressive, and the book that resulted from this cooperative venture is equally so. In all likelihood the book will not only become a reference for archaeologists doing research on the High Plains, but also it will also serve as an example of how to approach archaeology holistically.

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Uqalurait: An Oral History of Nunavut. Compiled and edited by John Bennet and Susan Rowley. Foreword by Suzanne Evaloardjuk, Peter Irniq, Uriash Puqiqnak, and David Serkoak. Montreal: McGill-Queen's University Press, 2004 (2008 paper). 520 pages. $75.00 cloth; $34.95 paper.

In 1999, Canada's Northwest Territories was officially divided to create the largest and newest Canadian federal territory, Nunavut, which comprises the bulk of the north-central mainland of North America, most of the islands of