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Review Essays

Interpreting Pawnee Star Lore: Science or Myth?

Douglas R. Parks

When Stars Came Down to Earth: Cosmology of the Skidi Pawnee Indians of North America by Vol Del Chamberlain. Los Altos, California: Ballena Press, 1982. 270 pp. \$17.95 Paperback.

The Pawnee were formerly a populous, semi-sedentary people, organized into small autonomous groups, who lived in permanent earth lodge villages along watercourses in east central Nebraska. They—and particularly one division, the Skiri—are noted among North American Indian groups for their elaborate ritualism and poetic interpretations of the heavens and the earth. Perhaps no other native people on this continent attached such an importance to the stars, who were for them a pantheon in the sky. Their cosmogony, which appears to be conceptually unique, told of celestial origins. Mankind was born of the unions of celestial gods: the first female was the child of Morning Star and Evening Star; the first male, the child of Sun and Moon. Each Skiri village traced its origin and its ritual to a particular star that, together with other stars, continued to control human affairs. Every individual, too, was related to a particular star. At one's birth, one star shone brighter than all others and would become known later in life when one fell ill, and a doctor who had power from an animal directly related to the patient's star was discovered and was able to treat the patient successfully.

The fundamental importance of stars to the Skiri was immediately apparent to outside observers and recorders of their culture. The stars pervaded Skiri intellectual life and its physical manifestations ranged from the spectacular Morning Star ritual sacrifice to the subtle artistic representation of the Morning Star

on cradle boards. The Morning Star Ceremony, in particular, captured the interest of many early historical chroniclers. Serious attempts to record the details of Skiri religious life and star lore, however, did not begin until the close of the nineteenth century, almost two decades after the Pawnee had been removed from their Nebraska homeland to a new reservation in the Indian Territory (now Oklahoma) and after traditional Pawnee culture had given way almost completely to the acculturative pressures begun by whites nearly a century earlier. These anthropological efforts to preserve a complete record of the former way of life continued until the 1930s. The important figures in this work were Alice C. Fletcher (Bureau of American Ethnology), George A. Dorsey (Field Museum of Natural History), and Clark Wissler (American Museum of Natural History). None of them spent any significant period of time among the Pawnee, and except for Fletcher they relied in large part on an educated mixed-blood Skiri, James R. Murie, to collect material from knowledgeable elderly Pawnees. Murie's efforts, which depended primarily on informants' memories, yielded a wealth of descriptive data, most relating to mythology and ritual. Large portions have been published over an eighty-year period, but there remains today a significant amount of manuscript material yet unpublished.

Most of the extant material on Skiri star lore is scattered throughout the published works and in the unpublished manuscripts and field notes of Fletcher, Dorsey, and Murie. The sources for this star lore are primarily myths, although both Fletcher and Dorsey attempted to identify the stars and constellations recognized by the Skiri. Dorsey, in fact, arranged for the astronomer Forest Ray Moulton to spend two evenings and one morning in July 1906 with a group of five Pawnees (Murie, two Skiris, a member of the Pitahawirata band, and an unidentified man) in an attempt to identify as many stars and constellations as possible. This endeavor, the only one ever involving an astronomer with Pawnees, was only partially successful. Moulton gave a sketchy report in which he enumerated seventeen stars, constellations, and planets—certainly not all of those known to the Skiri. He felt he could confidently identify eleven of them, and, based on descriptions of three others, he suggested their probable identities; but he was unable to identify the remaining three. His identifications undoubtedly form the basis for those given by Murie in *The Ceremonies of the Pawnee* (Smithsonian Con-

tributions to *Anthropology* 27, 1981: 41, *passim*) and subsequently relied upon by other writers.

* * * *

When Stars Came Down to Earth represents the efforts of Von Del Chamberlain, an astronomer, to consolidate all of the scattered material on Skiri star lore and organize it into a coherent description of the celestial phenomena recognized by the Skiri. In so doing he discusses and evaluates the evidence for previous identifications of celestial objects given in the literature. Of these, some have seemed consistent and correct, but others have been conflicting, and Chamberlain has attempted to resolve them whenever possible. He has, moreover, suggested identifications for a number of stars and other objects not previously identified in the sources. The latter are admittedly extrapolations—really personal speculations—which “probe beyond what has been documented” and are “the result of a lengthy contemplation of relationships that have not been recorded but that are of obvious interest to the astrohistorian.” To “ponder these relations and possible identifications,” Chamberlain utilized the planetarium instrument of the Albert Einstein Spacearium of the National Air and Space Museum. In addition to the long presentation of celestial objects, the author describes in detail the structure and symbolism of the Skiri earth lodge and its potential as a crude observatory. Finally, he discusses the intriguing Skiri star chart, a portrayal of the heavens on a piece of tanned hide.

Although Chamberlain characterizes this book as a study in ethnoastronomy, it is important to realize that, unlike other studies of ethnoscientific systems, the source material upon which it is based comes from historical documents—primarily mythology but also from limited recorded observations and field identifications made at the turn of the century. Thus, it is more precisely an historical study, an exercise in the cultural reconstruction of an ethnoastronomical system.

Chamberlain's reconstruction rests on several controversial assumptions. The fundamental one is that episodes in myths refer to real historical events and provide hints from which still others may be inferred. For him, as for John Swanton, much historical reality is masked by a subjective haze, and Chamberlain characterizes his study as an attempt “to cut through some of that haze.” Because many Skiri myths refer to stars and other sky

phenomena, he is convinced that their cosmology was inspired by observations of such repetitive astronomical phenomena as lunar cycles and planetary motions, and that the relative importance of these elements in Skiri mythology implies sustained observations over long periods of time. Some Skiri individuals, he suggests, carefully watched the sky over time and passed their knowledge on to subsequent generations. In these sustained efforts we see "the very tips of the roots of what we call astronomy," one example of "an initial development of astronomy which never did become truly scientific . . . but which was sufficient for its time and cultural context."

To introduce the reader to many of the concepts which are subsequently discussed and interpreted in the book, Chamberlain presents in a prologue a reprint in full, without commentary, of Murie's version of the Pawnee origin myth which first appeared in Natalie Curtis's *The Indians' Book* (1907: 99-104). This story is an elaborate version of one episode in Skiri cosmogony: how Morning Star overcame Evening Star to sire the first human female, who was placed on the newly formed earth. It is part of the much longer mythical account of the origin of the Skiri world, a complete version of which, recorded by Dorsey, is reprinted in Chamberlain's book as Appendix 1. It is this longer account which forms the actual backdrop for what follows in *When Stars Came Down to Earth*.

In the first chapter, *The Performers*, Chamberlain presents a very sketchy and inadequate synopsis of Pawnee history; a long account of Murie's life and work, and of the anthropologists who collaborated with him; and a cursory discussion of Pawnee sacred bundles with allusions to, but no actual description of, the "richly symbolic" ceremonies and songs associated with them.

The second chapter, *The Cast of Stars*, is the core of the book. It is a digest of all the recorded information on celestial bodies named by the Skiri. Each entity is treated separately, and all salient information, published and unpublished, on Skiri star names and their identifications is presented. The effort which went into this assemblage is admirable, since Chamberlain not only searched the published literature thoroughly but also diligently scoured the archival resources to utilize the unpublished manuscripts and correspondence of Fletcher, Dorsey, Murie, and Wissler. Hence, he has compiled an exhaustive body of data.

These data, however, are presented more as an unintegrated assemblage of sometimes lengthy, widely scattered reading notes than as a polished narrative. The narrative flow is further interrupted by occasional excursions into Pawnee mythology and rituals. In the discussion of the Morning Star, for example, there is a protracted description of the ritual sacrifice to the Morning Star, followed by a long discussion of known historical performances of the ritual. Both could have been drastically condensed to convey the same information. This chapter would have been improved most, however, if it had been a meaningful synthesis of the material based upon an understanding of Pawnee culture, and not merely a compilation.

More perturbing than the manner of presentation, though, are several methodological assumptions that seriously affect Chamberlain's interpretations of the data he reviews. One of these is his virtually uncritical reliance on mythology as a source for star identification. Since this chapter is primarily a compilation of Skiri mythological references to celestial bodies, and only secondarily of recorded observations and field identifications, one must ask what kinds of information can be gleaned from myths and how valid are the identifications and other astronomical data in them. Can they tell us what native observers would tell an astronomer based on actual observation?

Anthropologists are by no means in agreement on the historical validity of events and locations occurring in myths. Some, like Robert Lowie, completely rejected all myths as accurate sources of any historical fact, while others, like Paul Radin, believed that historical events and past cultural patterns can be reconstructed from myths. Perhaps the majority, though, subscribe to Edward Sapir's belief that authentic information can be found in myths when it is corroborated by other lines of evidence (e.g., archaeological, linguistic, or ethnographic). For most cultural historians it seems fair to say that myths can indeed provide historical clues if used judiciously and in conjunction with independent forms of corroboration.

By developing his ethnoastronomy largely on the basis of mythological material, Chamberlain places implicit faith in myths as historical sources (except, of course, where he is dissuaded by other evidence). He insists that the stars in Pawnee mythology were observed and identified entities, and that on the basis of

clues in oral traditions we can identify those bodies and draw inferences of native astronomical activity. Frequently he is convincing, as in the instances of the Morning Star and Evening Star, where astronomical arguments substantiate the identifications as Mars and Venus respectively. It also certainly seems more than fortuitous that the mythological and ritually enacted accounts of the courtship and marriage of Morning Star and Evening Star parallel the repetitive movements and conjunctions of Mars and Venus in the evening skies. There is, moreover, ample corroborative evidence to support these identifications as well as to substantiate the observations upon which the myth was apparently based.

What is not convincing, however, is Chamberlain's insistence that, for the Pawnee, all named stars must have had a consensual identification, even when the sources point to a different interpretation. An example here is the four semicardinal direction stars. These four stars were, I suspect, primarily conceptual or symbolic entities that fit into the Skiri priest's cognitive map of the sacred world—a map that was composed of several sets of four symbolic elements: colors, animal species, trees, and meteorological phenomena (thunder, cloud, lightning, and wind). Like the four sacred colors (red, white, black, and yellow) there were four stars: Red Star, White Star, Big Black Star, and Yellow Star.

None of the previous students of Skiri culture was able to obtain identifications for these stars. The Skiri priest Roaming Scout, in fact, informed Fletcher that his grandfather had told him that these stars were "distant and dim and hard to see." Chamberlain curtly dismisses this testimony and asserts that "it does not seem likely that dim stars would be chosen to portray the idea of sky pillars," and that in his opinion "those stars were dim only in the fading memories of the old Skiri traditions." He then proceeds to identify these stars on the basis of their colors and concludes by suggesting that star color itself would account for the origin and importance of the four sacred colors in Skiri religion! What he apparently does not realize is that other tribes, like the Arikara and Sioux, had the same four sacred colors but did not associate them with (particular) stars.

By doggedly insisting on specific identities for the four directional stars, Chamberlain fails to understand their existence as symbolic entities—that their associations with specific stars were

indeed perhaps only vaguely known and that it was their symbolism that was of primary concern to the Skiri. A parallel example of such symbolism is provided by the Pawnee animal lodges, sacred sites that these people believed were the locations of underwater lodges of different animals, into which certain individuals had been taken and there given supernatural powers by the animals. These lodges, originally vision sites, subsequently became mythologized. In Pawnee oral traditions recorded at the turn of the century, their locations were vague and impossible to determine precisely because they had developed into symbolic motifs. Yet within the religious system they had become very important, and for the Skiri they had become symbolic directional reference points to which smoke offerings were made in the Medicine Lodge ceremonies (Douglas R. Parks and Waldo R. Wedel, "Pawnee Geography: Historical and Sacred," *Great Plains Quarterly* 5, (1985), 143-176.

In his eagerness to establish the precise identities of mythologized stars, Chamberlain neglected to consider that in non-literate cultures there is a great deal of individual variation in ritual knowledge and in the conceptualization of events and places. In even small, relatively homogeneous societies, individuals will differ in their identifications of culturally symbolic entities; in larger groups, the opportunity for such disagreement becomes still greater. Conflicting opinions concerning geographical points are well known for the Pueblos and the Navajos. The Tewas, for example, do not agree on the identities of the four sacred mountains which delineate the conceptual boundaries of their world. The Skiri formerly lived in small scattered villages, and it is highly unlikely that they ever shared a single nomenclatural system for the stars or a single set of recognized stars common to all these villages. There is also no reason to assume that later, after the formerly independent Skiri villages had coalesced into a single one, differences in names or identities were sorted out and a single system accepted by all—particularly as knowledge among the Skiri, and the Pawnee generally, was individually "owned" and jealously guarded. The identities of some important stars were undoubtedly agreed upon, but those of many others surely were not. Hence, the attempt to pinpoint many stars may have been as futile formerly as it was in 1900.

Significantly, Chamberlain comments late in the chapter that some of the "inconsistencies" he encountered may only be ones

created by the analyst himself, who is "trying to discover a logical conceptual consistency which was neither present nor important in native thought." Yes, indeed. But why was this caveat not stated at the outset and the insight woven into the entire discussion of star identifications rather than attempting throughout the chapter to discover logical consistencies and precise identifications, only falling back on this explanation in a recalcitrant case? Unfortunately, Chamberlain also applies this conclusion to a baffling problem that he himself has already partially invented by previously assigning identifications to the semi-cardinal direction stars—his own speculations—and then trying to explain the symbolic associations of two of them that are later identified with different names (Wolf and Snake).

Chamberlain's discussion of the identity of the Wolf Star raises a collateral issue, his propensity to make pointless statements and comparisons that the reader must not interpret as being relevant to Skiri perceptions of the world. The Pawnees who visited Moulton in 1906 described the Wolf Star as very bright and bluish white, and told him where it was located. Although it was not visible during the interviews, Moulton identified it as Sirius on the basis of the descriptions. Chamberlain remarks:

Sirius is the brightest of the night stars . . . and it could very easily be thought to be jealous of the powers of the Evening Star, Venus, which is still brighter, and to be her rival. . . . We should also note that this star must have been special to the Skiri in other ways, since it bore the same name as the people themselves—the Wolf band. (p. 128)

These statements, typical of many made throughout the book, are mere speculation and contribute nothing to the issue at hand.

Another source of debate is Chamberlain's propensity to impute an astronomical basis to mythological and ritual acts. In Skiri mythology, human qualities and actions are attributed to stars who act out human dramas. Chamberlain maintains that the Skiri first made repetitive observations of various stars and then constructed dramas based on those observations. Actually, it may well have been that already established mythological plots—perhaps plots shared with other Plains tribes—were secondarily attributed to stars (i.e., were cast with star characters). In such cases some observations may have influenced stories, particularly

observations of the movements of prominent objects like Mars and Venus; but repetitive observations of less prominent stars need not have been the rule at all. The only pertinent historical evidence—that for the Morning Star Ceremony—certainly does not lend support to an astronomical basis for its performance. After acknowledging that historical sources show that evening conjunctions of Mars and Venus preceded some documented performances of the ceremony, but not others, Chamberlain concludes that history does not support the relevance of evening conjunctions as a determinant.

It seems important to realize, too, that repeated observations of the same phenomenon, handed down traditionally, are not necessarily to be inferred from mythological incidents, terrestrial or celestial. A single individual can invent a mythological drama on the basis of a single observation—or on no observation at all, for that matter, but simply his imagination. The study of Pawnee mythology shows that once an historical character or geographical site became mythologized, it was freely used as an element, created or substituted, in other myths (Parks and Wedel, *op. cit.*; Douglas Parks, "An Historical Character Mythologized: The Scalped Man in Pawnee and Arikara Mythology," in Douglas H. Ubelaker and Herman J. Viola, eds., *Plains Indian Studies*, (1982, 47-58). In the same way, stars, once they became mythologized, could have been freely manipulated in a variety of mythological contexts.

The preceding misgivings about Chamberlain's approach to the study of Skiri star lore are based on what I feel is his failure to clearly distinguish between star lore as mythology and star lore as astronomy. Chamberlain has utilized mythological data to try to reconstruct a Skiri astronomy. Because stars are the actors in many important myths and rituals, he concludes that the Skiri were keen observers of the sky who were on the threshold of becoming scientific astronomers. They may well have been; in fact, mounting archaeological evidence points to the Pawnees or their precursors, as well as perhaps other Plains tribes, having been astronomical observers at some time in the remote past. But it does not seem likely that those late historic Skiri myths which include star actors necessarily resulted from such observations.

Although he provides an interesting perspective on Skiri star lore, Chamberlain focuses his study on ancillary issues. It is certainly interesting to know all the stars recognized by the Skiri and

to seek to determine what their astronomical basis was; but the data are primarily mythological, not astronomical, and they point to the need for a study of Pawnee star lore as mythology. To that end, it is necessary to analyze Skiri mythology as a whole, not just one genre, and to examine it as a symbolic system in its wider cultural context. It is also necessary to study it from a comparative perspective to determine how Skiri star myths may relate to similar or identical stories among other Plains tribes, since many of them may have common themes.

The third chapter, entitled *The Setting*, is a description of the structural symbolism of the Pawnee earth lodge and the mythological explanations ascribed to it. Here, too, Chamberlain succumbs to the temptation to accept native explanations that derive the configuration of the dome-shaped earth dwelling from a mythological basis. Although he raises the question of a similar symbolism for other earth lodge-dwelling tribes, he does not confront the possibility that the symbolic explanations of the Skiri and the Arikara are not historical but rather were grafted onto an already developed structure, that is, were a secondary development. That many of the tribes who used earth lodges had similar mythological explanations for its structure (e.g., the Mandan) certainly is suggestive of a diffused mythological theme subsequent to the establishment of an architectural form. This is not to say, however, that Skiri star symbolism did not affect the form of the earth lodge in some ways—only that Chamberlain has not fully explored all the possible explanations contributing to its development as a common Plains domicile. Surely, a facile mythological explanation is not sufficient.

In the fourth chapter, Chamberlain focuses on the observational possibilities afforded the Skiri by their earth lodges. Using geometry together with reliable repetitions of astronomy, he presents the results of two investigations: one to determine what stars the occupants of a geometrically idealized Skiri earth lodge could have observed through the entryway and the smokehole when stationed at various locations within the lodge; and the other to point out what plays of light they could have observed coming through the entryway and smokehole at various periods throughout the year. Chamberlain also suggests ways in which the priests could have maximized the observational potential of their lodges. These engaging data tell the reader precisely what a Skiri could have seen from within his home if the entrance and

smokehole were open, if internal furnishings did not obstruct the view, and if the lodge were symmetrically constructed. Daily living, unfortunately, interfered with the ideal, as Chamberlain himself notes; and neither the data he presents nor the historical record tell us precisely what actual use the average Skiri or his priest made of the possibilities he had available. All the contemporary student can do is speculate.

The final chapter is a description and discussion of a seemingly anomalous Skiri ritual object, a representation of the heavens painted on a tanned animal hide and generally referred to as the Pawnee star chart. As a portrayal of stars in the heavens, it is unique for aboriginal North America. It holds fascination for scholars and laymen alike, for it has epitomized the Pawnees' preoccupation with the heavens and come to symbolize their identity with a star cult. In 1902, Murie obtained the chart for the Field Museum, where it has been ever since. When Chamberlain examined the chart in the course of his study, he questioned a previous estimate of its age (300 years) and arranged to have the hide studied more thoroughly. The results were identifications of the pigments on it, but neither its age nor the animal species of the hide has yet been determined. After reporting on what he learned, Chamberlain critically reviews the history of the study of the chart and several spectacular claims made for it.

The bulk of the chapter, however, is devoted to long quotes and synopses from unpublished texts recorded by Dorsey and Murie from the Skiri priest Running Scout, apparently when the latter transferred the chart to Murie. The chart was being opened and referred to throughout much of what Chamberlain quotes, the text being a recording of Running Scout instructing Murie in its meaning and pointing out the stars represented on it. This section, which presents excerpts of a Skiri priest's conception of the heavens in his own words (in translation), is perhaps the most compelling part of this book, both because of the material's inherent interest and because it serves to underscore the value of cultural activity and description recorded in the native language. After this presentation, Chamberlain suggests that the star chart, which illustrates most of the celestial objects important to the Skiri, is not to be interpreted as an accurate star map but rather as a representation of the sky as a Skiri priest conceived it—an object that incorporated the powers of the stars and that, when ritually opened, brought these powers to the people. He inter-

prets it as a mnemonic device used for recounting the origin of the Skiri world and these people's relationships to the heavenly beings, an interpretation with which I am in complete agreement. All Pawnee and Arikara sacred bundles contained mnemonic objects used during the ritualized recitation of their origins; consequently, the star chart, although different in form from all other such objects in Pawnee and Arikara bundles, nevertheless falls into a common functional category. It is also reminiscent of the winter counts of other Plains tribes, who recorded events—historical, however, rather than mythological—by painting on hides mnemonic images that later served to facilitate the recall of those events. In this light, then, the star chart is not the anomaly which it might otherwise appear to be, as it is part of a more widespread Plains pattern of using painted hides for memory recall and instruction.

In an epilogue, Chamberlain concludes that the uniqueness of Skiri intellectual life was their fascination with and knowledge of the sky, and then he proceeds to enumerate eight conclusions emerging from his study. Some of these are so obvious as to be trivial. One is the statement that the Skiri were aware of the entire range of meteorological and astronomical phenomena. A similar conclusion is that the Skiri knew that objects occasionally fell from the sky and that they had likely observed meteorites fall. Is there an American Indian society for which these same statements cannot be made? Other conclusions are neither novel nor unique to the Skiri. One is that the surviving list of planets, stars, and constellations indicates that they had a well-developed system of labeling objects of the sky. Another is that the Skiri were concerned with directions and used the stars to determine them. These statements are true for many, if not most, Indian groups and serve once again to underscore the need for a comparative study of the astronomical knowledge of other tribes before they can be put forth as being unique to one society. The remaining conclusions are primarily inferences that are by no means established facts: the belief, for example, that the union of Morning and Evening Star is a strong indication that the Skiri watched the changing relationships of the planets. Chamberlain's general theme—the uniqueness of Skiri star lore—is secure, but his conclusions are not compelling arguments to support it.

That they are not compelling is due largely to two causes: in part to a lack of a comparative perspective that reveals what is

truly unique to the Skiri; and, more fundamentally, to the approach which Chamberlain has followed in his study. Although he never explicitly states it, he seems to have set out to find his "roots," looking for a society of incipient astronomers. What he found instead was a religious system and mythology full of symbolism, in large part celestial, and very different from our own. This system and its symbolism are the important objects of study, and the ones which this book does not adequately address.