

ly behind the theodolite, and also to the left of it. My own examination of the site reaffirms my opinion. Of course, this does not make the buttressing effect of the stones any less real, only less deliberate.

2) Given the engineering and architectural skills of the Chacoan Anasazi (10, 16), the Fajada Butte site seems strangely crude and less developed (although not necessarily less precise) than one might expect. The Chacoans built magnificent walls of banded, close-fitted masonry, even when they covered them immediately after construction with adobe plaster (16). The lack of or minimal shaping apparent on the slabs seems out of character with Chacoan construction and resembles more that found at some of the sites at Mesa Verde (17). There is, of course, no evidence that the Mesa Verde peoples built the Fajada Butte site, at least none that has come to light.

3) The authors state, "Pueblo Bonito . . . was built with its primary elements of design precisely aligned to the rising and setting of the equinox sun and the daily noon position of the sun." They do not indicate what these "primary elements" are, but the present form of the site represents, more or less, the last in a long series of construction phases and is quite different from the earlier configurations. Judd (16) has shown that the front and center walls of Pueblo Bonito (which, I suspect, may be the "primary elements" to which Sofaer *et al.* refer) were added late in the construction. With the addition of these walls, Pueblo Bonito may have had major architectural features aligned to the equinox (6), as well as to the winter solstice sunrise (10). But these features are secondary, not primary in terms of the construction sequence. From its inception, however, Pueblo Bonito was apparently planned and oriented to maximize insolation, thereby making it a highly efficient structure (18).

The solar marking site discovered by Sofaer *et al.* is unique, as far as we know. It is an important discovery, and the site may very well be prehistoric. Nevertheless, it is questionable whether the Anasazi built it, at least on the basis of the evidence presented by the authors. We cannot date either the slabs or the petroglyphs; there are no artifacts found in direct association with the site that are definitely Chacoan Anasazi; and the site does not fit well with the ethnographic data on Pueblo astronomy. The authors suggest that further study may help to clarify the situation. I hope they undertake this additional work, but with

an archaeologist and Pueblo ethnographer on their research team. Failure to do this greatly reduces the likelihood that truly valid results will be achieved and that the site will be placed in its proper historic context.

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We are grateful for the opportunity to reply to Reyman's letter. We note that Reyman's comments affirm our article's description of the operation of the Fajada solar marking construct. We repeat the point made in the very title of our article and underscored in our conclusion: the *uniqueness* of the Fajada construct among known archaeoastronomy sites.

We find no clear precursors in it in any of the cultures of the Southwest. It does not fit clearly into what was hitherto known about *any* of these cultures. Yet it belongs to one of them, and thus it adds to and expands the "ethnographic context." (Reyman's reference to the "Jemez site" is not clear: what he describes seems to be a form of sundial, yet his reference 9 describes a totally different sunrise alignment. Neither description bears any relation to the Fajada assembly.) The nearest to it is the calendar-marking "channeling of light" by architectural features of various Anasazi buildings, to which we referred.

We stated explicitly that our assignment to a particular portion of the Anasazi period was of necessity without archaeological confirmation of the site and was probabilistic in nature. The construct required an accurate solar-based calendar, a tradition of observing the sun's motion, and a strong interest in the matter; the "leap forward" that it represents would have occurred *most likely* in the most favorable milieu. The assignment to the Anasazi at the time of their cultural florescence is, we feel, the most consistent with present knowledge; attempts to assign it otherwise on narrow grounds yield incongruities. Future findings could, of course, always change this analysis.

We attempted no explanation of why a spiral was chosen as the focus of the construct. Since this carefully inscribed spiral is used in a clear solar-calendric context, we seem to have found a new example of the use of this symbol, to add to the existing examples rather than to contradict them.

We trust that our findings will inspire further work at Chaco, both a detailed archaeological study of the Fajada site and a more general study of this aspect of Native American thought including a search for analogous sites and precursors. We certainly hope to participate in the future work at this exciting juncture. Archaeoastronomy, archaeology, and ethnography are indeed interwoven, as Reyman points out, but new discoveries in one subfield can open new and unexpected vistas for the others.

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Erratum: In the News and Comment article by R. Jeffrey Smith, "Reprocessing plants may pose weapons threat" (11 July, p. 250), it was reported that future reprocessing plants would process 150 tons of plutonium annually. The correct amount is 15 tons.