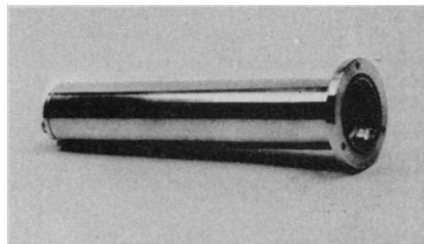


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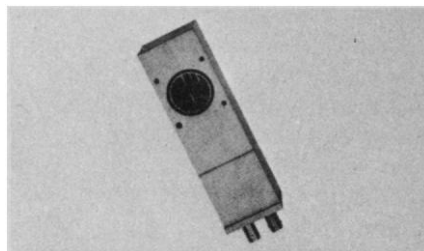
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the Pueblo Bonito windows, the use of a horizon calendar would also allow one to predict accurately the advent of the winter solstice sunrise; the windows need not be considered deficient in this regard. The reader should note that the "sun-watching stations" to which Williamson refers are considered by Williamson *et al.* (1) to be possible observation sites. Thus, additional evidence is needed before these sites can be used as a standard by which to evaluate the Pueblo Bonito windows.

Williamson's statement that, "It is merely a guess. . . ." puts the cart before the horse. The correct procedure, which was followed, is to test specific hypotheses generated from the ethnographic data for the Pueblos—in this case, that the windows were aligned along their central axes to the winter solstice sunrise. Therefore, we first determined the central axis for each window and then sighted along each axis to the horizon. On the winter solstice, the sun rose at the sighting point on the horizon for each window. For the window in 225B, the central axis can be determined from the intersection of the stones which comprise the bottom edge of the window; this is not possible, however, for the window in 228B, which is constructed differently. The central axis must be determined by physical measurement, a technique which can also be used on the window in 225B.

Williamson notes that these solar alignments may have had religious significance. This is probably true, but his argument ignores the fact, discussed by Rappaport (2) and well-documented for the Pueblos (3-4), that religious ceremonialism contributes significantly to human adaptation. As I noted, in the case of the Pueblos, the major ceremonials center on the planning and implementation of the farming system. Thus, that the alignment of the windows to the winter solstice sunrise may have had religious significance does not preclude the more fundamental, adaptive function of these architectural features, since the religion itself serves the same adaptive strategy, at least in part. Similarly, that accurate predictions of astronomical events increases priestly power and prestige (4, p. 206) does not preclude the more basic function of such predictions to gain a greater understanding of seasonal changes in order to increase the likelihood of a successful harvest. Pueblo religion, at its base, serves to increase the adaptive efficiency of subsistence strategies; therefore, while the alignments may have had "richer significance" as suggested by Williamson, we must first examine them within a framework of ecological adaptation. My

article attempted to do this and no more.

Finally, Williamson is correct in pointing out that the windows are in rooms 225B and 228B, not 225C and 228C, as I stated. My error resulted from an attempt to resolve an apparent inconsistency in Judd's (5) room designations. In so doing, I mislabeled the rooms. As Williamson notes, however, the alignments are real; they are correct, but my original room designations are not.

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Taxonomists Wanted

As a chemist with a research interest in archaeology, I have for some time been concerned with increasing contacts between physical scientists and archaeologists. One modest result has been the "Archaeometric Clearinghouse" published recently in the *Journal of Field Archaeology*. It will, it is hoped, lead archaeologists to those physical scientists who are best equipped to extract useful information from archaeological finds and result in useful interdisciplinary collaborations.

The project is actively supported by the Committee on Science in Archaeology of the Archaeological Institute of America. The response has been good, and I have been asked to enlarge the range of the "Clearinghouse." A badly needed roster is one of taxonomic experts who can identify organic remains: wood, seeds, pollen, bones, and so forth. Unfortunately, such specialists, many of whom have never worked on archaeological materials, are difficult to locate.

I therefore ask that interested taxonomic specialists in relevant fields send me their names, addresses, and fields of specialization for inclusion in a future listing.

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