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## Two Studies in Shang Chronology and Warring States Historiography

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David S. Nivison, well known for his wide-ranging studies of Chinese history and philosophy, was the Walter Y. Evans-Wentz Professor Emeritus at Stanford University. Before he passed away on October 16, 2014, he sent the following two essays to *BJAS*. Though conceived separately, the relationship between the two essays is self-apparent, and the editors have chosen to present them together in this issue.

Both essays attempt to take seriously the knowledge of Warring States scholars with regard to Chinese chronology as ancient as the beginning of the second millennium B.C. The first essay is entitled “Was Warring States China ahead of Greece in Science?” Using both the *Bamboo Annals* and other early sources, Nivison argues that the compilers of the *Bamboo Annals* had astronomical records from the remote past that were far superior to those of the ancient Greeks. He thus answers his own question in the affirmative with regard to this particular issue. The second, “The 31 Years Problem,” presents an intricate argument regarding a single discrepancy in the chronology of the *Bamboo Annals*, which Nivison argued was an authentic and largely accurate chronology. The essay includes thought-provoking reflections on epistemology and the philosophy of history.

Nivison’s unique combination of historical breadth and rigorous number-crunching leads to countless keen observations, and challenges us to treat ancient texts seriously and with imaginative sympathy. The two essays are presented here with only slight editing, since their informal writing style vividly captures Nivison’s creative thought processes.

**Keywords:** Shang chronology, Warring States historiography, *Bamboo Annals*, philosophy of history, Greek science

## Was Warring States China ahead of Greece in Science?

In at least one respect, yes. When the leading states were declaring themselves kingdoms, the philosopher Mengzi (“Mencius”) once said, “Heaven may be high, and the stars in their seasons far off, but if you just study their regularities (*gu* 故 “causes”), you can sit at your desk and still determine the dates of the solstices a thousand years earlier or later” 天之高也，星辰之遠也，苟求其故，千歲之日至可坐而致也 (4B26). At this time people marveled at the possibilities of precision in the study of astronomy and the calendar, and Mengzi 孟子 shared this attitude. He was talking, here, about the 19-year intercalation cycle, familiar enough so that it was echoed even in popular stories—the butcher in *Zhuangzi* 莊子 who doesn’t need to sharpen his knife for nineteen years; the Lord of Qin in *Mozi* 墨子 who is granted nineteen more years of life because of his good government.

A century earlier than Mengzi, when the last disciples of Confucius were passing away, this knowledge was perhaps still new, and could sometimes be used in ways we would have to call unscientific. Even so, instances show what technical knowledge was available. I want to examine one such instance. The instance involves some historical calculations done between 432 and 428 B.C., concerning two astronomical events in the remote past *fifteen centuries* earlier, in 1953 B.C. and in 1876 B.C. What really amazes me is that the calculator reveals to my analysis that *he had accurate records of these events*. I owe my own knowledge of the first event to Professor. David W. Pankenier<sup>1</sup> and of the second to Kevin D. Pang.<sup>2</sup>

It is not known whether the intercalation cycle was introduced into China from the West, or was constructed independently by the Chinese.<sup>3</sup> The cycle attempts to solve a problem confronting any civilization based on agriculture and using a lunar calendar: such a calendar must be kept aligned with the

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1 David W. Pankenier, “*Mozi* and the Dates of Xia, Shang and Zhou: A Research Note,” *Early China* 9–10 (1983–85): 175–83.

2 David S. Nivison and Kevin Pang, “Astronomical Evidence for the *Bamboo Annals*’ Chronicle of Early Xia,” *Early China* 15 (1990): 87–95.

3 A description of it suggests a third possibility: did it start in China and spread to the West?