

A DETECTIVE'S DYNASTIC

STORY BY CHRIS QUIRK • PHOTOGRAPHY BY CHRISTA NEU



COUP

STUDYING THE STARS, DAVID PANKENIER UNLOCKS THE MYSTERY OF AN ANCIENT CHINESE REGIME CHANGE.

David Pankenier was a graduate student in 1981 when he entered the growing ranks of scholars who were stumped by a dynastic change that occurred more than 3,000 years ago in ancient China.

Pankenier and his teacher, Stanford philosopher David Nivison, were mystified by the shift of power from the Shang, who had ruled for 500 years and developed the first Chinese writing system, to the upstart Zhou, whose homeland was in the remote west.

The suddenness of the Zhou's conquest, says Pankenier, a professor of Chinese at Lehigh since 1986, was without precedent in Chinese history. "The Zhou had been peripheral and subject to the Shang, so this was a cataclysmic event, a major coup."

Three decades ago, scholars were able to trace the dates of ancient China's dynastic reigns with certainty only to the ninth century B.C., to the year 841. The Zhou's rise to power had occurred sometime in the previous two centuries, but scholars for more than two millennia had been unable to pinpoint the exact date. Early records—inscriptions on oracle bones and bronze or transmitted texts—provided scant information, much of which could not be confirmed.

"We were reading traditional texts that alluded to astral bodies signified in the conquest of the Shang by the Zhou," recalls Pankenier. One passage stood out. Toward the end of the Shang dynasty, it said, five planets gathered in a specific lunar lodge (a narrow slice of the sky) and "a great red bird descended onto the Zhou ancestral altar clasping in its beak a jade scepter."

Pankenier had a hunch. If he could find astronomical evidence of a grouping of the planets like the one described in the phrase, he could solve the puzzle of when the coup occurred, decipher the mythical imagery and perhaps discover if a planetary gathering had been regarded as an oracle that played a part in the surprising ascendancy of the Zhou.

In short, an astronomical event that could be definitively dated might settle the matter. "There were many competing chronologies,"

says Pankenier. "I wanted to cut through that if I could." Moreover, a finding might render the reliability of ancient source materials in a new light and open up fresh sources of information for Chinese scholarship and research.

Pankenier's long-ago hunch has led to a 30-year career, much of it devoted to archaeoastronomy, the study of the role the stars have played in the political and cultural development of humanity. The passage that piqued his graduate-student curiosity was from the Bamboo Annals. The slats of bamboo, which had originally been bound with thread and rolled up, contained a chronicle of Chinese history going back to the earliest times. Found by grave robbers in the year 281, who—to the chagrin of historians—used some of them to light the way for their plundering, they were painstakingly reassembled and transcribed not long after their discovery. These transcriptions are what remain to us, but the Bamboo Annals were long believed by many to be unreliable at best, if not total fakes.

Pankenier's tale is worthy of a mystery, and he tells it with the measured precision and occasional wry turn of phrase of a seasoned investigator, raising his eyebrows to portray the stupefaction he felt when he reached a startling twist. He displays an easy command of his scholarship, and a depth of expertise across a range of subject areas that seems almost unfathomable. Every new development of the narrative reveals an obscure detail demanding a nuanced grasp of philology or history that is available only to those who are deeply immersed in the discipline.

A true polyglot who speaks fluent Swedish and Chinese in addition to English, Pankenier began his graduate studies in Sweden. Languages came easy for him, so he turned to Chinese for a challenge. "You get so much for free with the European languages, with cognates and such." He studied classical and modern Chinese in Stockholm for four years and in Taiwan for three. Arriving in Stanford in 1978, he studied Chinese history, philosophy, religion and literature. His interest in the earliest excavated inscriptional materials from the Shang and



“IN THE CHINESE SCHEME, THE MILKY WAY AND THE YELLOW RIVER

Western Zhou motivated him to take up paleography. “The language of the inscriptions is archaic,” he says, “and the characters, though recognizably Chinese, are very different in composition, so this is a highly specialized study, more or less akin to reading hieroglyphics.”

Human beings have always had a magical relationship with the stars; they are often the source of our first metaphysical musings. The ancient Chinese were no less obsessed with the nighttime sky; they saw its potential for portent and also inferred a confluence between the heavens and the earth. “The philosophy and metaphysics of China is shot through with the notion of conforming with the heavens,” says Pankenier. “In the Chinese scheme, the Milky Way and the Yellow River were considered to be astral and terrestrial equivalents,” with stars

nearly unimpeachable verification for historical events that are not always well-documented. And the wealth of anthropological and cultural information it uncovers can give scholars new vistas on the past. “In archaeoastronomy,” says Norman Girardot, Distinguished Professor of Comparative Religions at Lehigh, who wrote the foreword for Pankenier’s book, “we’re talking about the primordial human encounter with the sky, the first sign that there’s something other than randomness. Every ancient culture dealing with that experience made it into a story that one can think of as a mythology or religious worldview.

“David has had the courage to deal with some of the most demanding scholarly areas imaginable. Mastering the ancient Chinese cultural and linguistic tradition is one thing. Add to that the astronomical data, and to put it all into a comparative framework dramatizes the brilliance and pioneering nature of his work.”

The ancient ideas still have relevance today, says Girardot. After the 2008 earthquake in Sichuan killed an estimated 70,000 people, including as many as 10,000 students who perished when their schools collapsed, Chinese artist Ai Weiwei created a series of poignant works. One was a sculpture constructed of children’s backpacks of the kind seen poking out of the debris of the wrecked buildings. Within the context of official secrecy in the aftermath of the earthquake and accusations of slipshod construction due to corruption, Ai’s works constituted a critique of the government. On the heels of a natural disaster, Girardot maintains, the Mandate of Heaven was understood as part of that critique. “Ai didn’t have to say overtly the earthquake was a sign that the Communist Party is not legitimate; everyone knew that was part of the message.”

Next year, Pankenier will expand his work in a new direction. He has been chosen for a fellowship at the Institute for Advanced Studies at Princeton, where he will study archaeological remains from China’s Bronze Age that are aligned with astronomical features. Working with colleagues from diverse backgrounds, he will attempt to gain a deeper understanding of the cultural heritage of China and beyond.

As Pankenier began seeking clues in the sky to help him decipher the puzzling phrase that seemed to refer to the downfall of the Shang dynasty, an amateur interest in astronomy was helpful, but did not fully prepare him for what was to come. Scholars had a rough idea—a window of about 100 years—of when the change from the Shang to the Zhou had occurred, so he began his search for a planetary grouping in the middle of that time frame. In 1981, no software was available to display planetary positions of the distant past. So Pankenier scanned column after column, page after page, of astronomical tables, looking for a moment when the five planets that can be seen by the naked eye—Mercury, Venus, Mars, Jupiter and Saturn—appeared near each other in the sky.

His search was complicated by restrictions. The planets had to be not just grouped but visible in the night sky. For instance, Mercury, the planet closest to the sun, is typically visible only around sunrise or



Second century silk brocade from Niya oasis in the Taklamakan Desert along the Southern silk route. The legend woven into the brocade reads: “When the Five Planets appear in the east it is beneficial for China.”

surrounding the glowing Sky River above corresponding geographically with points on the river below.

He relates an oddity from the Han dynasty. “In the second century astrology had become so popular that people were weaving into brocade the phrase ‘When the five planets gather in the east it is beneficial for China.’ So you had people walking around with these very expensive silk robes with a motto on them like a T-shirt.”

Most important politically was the concept of the Mandate of Heaven, which Pankenier defines in his upcoming book, *Astrology and Cosmology in Early China: Conforming Earth to Heaven*, as “the idea that political legitimacy is directly conferred by the Supernal Lord on a worthy ruler.”

Archaeoastronomy cuts a wide swath through the academy, encompassing astronomy, philology, history, archaeology, anthropology and cultural studies. The astronomical aspect of the field can provide

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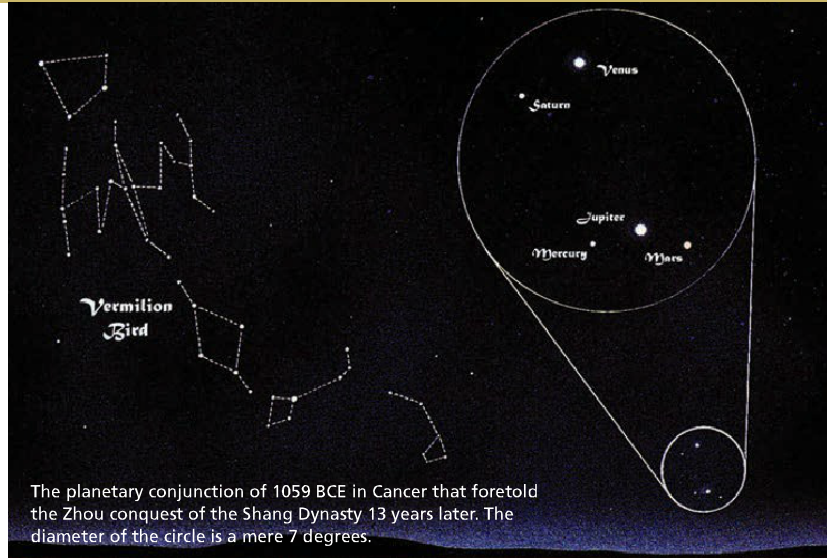
sunset. The phenomenon of precession, a long-term wobble of the earth's axis in relation to the stars, meant that Pankenier would have to calibrate any finding with present-day locations of stars to establish definitively the position of a planetary grouping in the sky 30 centuries ago.

He began with no guarantee he would find anything of value, but it didn't take him long to hit pay dirt. Scanning line by line a volume that showed positions of the planets at 10-day intervals, he saw that in May of 1059 B.C., the five planets appeared packed together in the night sky. Their closest approach, on May 28, was extraordinary. "You could have blocked out the entire grouping by holding your fist at arm's length," Pankenier says. It must have been stunning to the Chinese at the time. The event has happened precisely once since then, he says, "in A.D. 750, and that one too bode ill for the reigning dynasty, the Tang."

Despite the apparent nearness of his goal, things weren't quite adding up. The Bamboo Annals said the planets were grouped in the area of Scorpius, but the astronomical charts indicated Cancer instead. When Pankenier pulled out a map of the sky, however, the picture began to come together.

"Cancer is at the western edge of a huge Chinese constellation called the Vermilion Bird," he says, "and this impressive cluster was positioned in the next lunar lodge over, called Willow. But the Willow lodge also went by a second name: Beak. So the clustering took place right in front of the beak of the red bird." The mention of Scorpius is a later insertion, probably when the text was being reconstructed in the third century.

Moreover, Pankenier says, the planets themselves formed the image of a scepter, which, being akin to an imprimatur, would have had powerful significance to the ancient Chinese. "At the time," he says, "such scepters signified the conferral of authority on a subordinate."



This would have reinforced the sense of oracle—that the Mandate of Heaven was being passed to the Zhou by the Supernal Lord.

Pankenier kept tugging at the thread. "What would this scene have looked like? Where were the Zhou located at the time? I created a chart that showed that this great Bird constellation would have been seen soaring down from the sky, right in the direction of the Zhou's ancestral home in the west. A great augury, and if you know anything about China, ancestor worship is a big deal. So there it is.

"When I finally put it all together, I literally jumped out of my chair," he says. "It's not given to many to discover something like this in historical studies. And it's an amazing feeling to suddenly see something so extraordinary through the eyes of people who lived so long ago." **LU**

AN INGENIOUS CONTRIBUTION

Pankenier recently completed his second volume of *Archaeoastronomy in East Asia* with astronomers Zhentao Xu and Yaotiao Jiang. The books translate ancient Chinese, Japanese and Korean astronomical records from their original Chinese into English. Dating back several thousand years, these records of eclipses, comets, auroras and meteor showers could previously be comprehended only by specialists.

The books, which took a decade to complete, provide thousands of original records in classical Chinese for every observational record translated. They have drawn interest from NASA because they



help astronomers identify orbits of comets and meteor showers and compute their future trajectories. They have also drawn high praise from scholars in China.

"David Pankenier's research has yielded outstanding achievements and many profound insights," says Li Xueqin, considered the most important Chinese historian working today. "From his book, readers can acquire a full appreciation of the spe-

cial characteristics of ancient Chinese ways of thinking.

"Pankenier ingeniously combines in-depth analysis, discussion and interpretation of ancient astronomy, in particular the nature and significance of astrology, to explore and integrate intellectual history and astronomy with political and military history, research from which scholars of many disciplines will derive benefit."

Li directs the Institute of Sinology at Qinghua University and the Institute of History at the Chinese Academy of Social Sciences, both in Beijing, as well as the Xia-Shang-Zhou Chronology Project (1995-2000) which established the dates of China's earliest dynasties.