

## Conference on Rituals, Mathematics and the Astral sciences

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**Alan Levinovitz** (James Madison University, USA) & **Daniel P. Morgan** (CNRS, SPHERE & SAW Project, Paris)

*Virtue on Trial: Ritual Archery Competitions and Astronomical Testing in Early China*

**Abstract** – In this talk, we will analyze written sources for the “Big Shoot” 大射, a ritual archery contest held at court for the purpose of selecting officers to participate in the royal sacrifices. The key to the “observation of virtue” in sport and/as ritual, we argue, is its quantification and the observed assurance of exact, reproducible benchmarks, and it is there, as concerns scoring and target geometry, where later commentaries spill the most amount of ink. This begs the question of whether the “Big Shoot” represents historical practice or scholastic fantasy, which we address with a survey of historical records from the third century BCE to the ninth century CE. Having explored the transferability of this model of ritualized, meritocratic testing over time, we then turn in the second half to an exploration of how the “shoot” 射 came to inform other forms of testing at the core of the history of science and thought in early Imperial China. The institution of the live trial for making policy decisions as concerns li 曆 calendro-astronomy, it turns out, operates on the same model and same rules of scoring, appealing to the vocabulary of archery to conceptualize accuracy, which comes as little surprise considering as how it was the grand clerk, or astronomer royale, who presided over both competitions. But, we argue, there is more than a bureaucratic connection at stake here. The archery competition reveals to the observers (觀者) the virtue of the participants, and, in turn, the virtue of the commander who chose them. Hitting the targets reveals broader capabilities of those involved—just as the participants aim at (CNRS, Université de Tours) targets to reveal their archery prowess, the “target”

system aimed at by the competition is not archery prowess but rather the virtuousness of the participants. The same archetypal testing system transfers neatly over to testing *li*, where a competition limited to specified targets (heliacal rising, etc.) serve to reveal the adequacy of *li* to an entire target system, namely the heavens. The accuracy of *li*, in turn, serves to reveal the “virtue” of its author and the ruler who possesses it. We will discuss these archetypes by building on recent work in philosophy of scientific modeling, looking at the correspondence between a competition and iconic modeling, and considering competition as a widespread but under-theorized form of idealization, the structure of which helps to illuminate foundational epistemic virtues of science.