

**Seminar SAW History of Science, History of Text, 2011-2016
SAW Three-day Meeting**

**How do writings in the astral sciences
document mathematical practices and the practitioners?**

February 5th, 2015

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Sphere confusion: the textual reconstruction of first-millennium hun instruments

Abstract – Ancient and modern alike, scholars of China treat the appearance of the ‘sphere instrument’ (*hun yi* 渾儀) in the Han (206 BCE – 220 CE) as a revolution in practice. Inspired by work on astronomical instrumentation in other traditions, I have come to realize that Chinese intellectuals were alone in their sphere fever, which begs the question of why. As nothing survives the first millennium by way of professional instrumentation, we must turn to texts to answer questions of construction, availability, use, and competition. Approaching the topic through Li Chunfeng’s 李淳風 (602–670) instrument catalogue, we find first of all that there is rampant terminological ambiguity between what we might call armillary spheres and celestial globes used variously for observation, demonstration, and calculation, and that descriptions of ‘observation’ often involve looking at the instrument rather than through it. When it comes to observational armillary spheres proper, we find that they were actually quite limited in number and accessibility. Working from instrumentation literature and observational records, furthermore, we look at issues of graduation, construction, alignment, and observational practice to assess matters of precision, accuracy, and popularity, concluding that practitioners’ obsession with the ‘sphere instrument’ had less to do with its observational application than we may have assumed.