

SAW Seminar:

Mathematical practices in the context of the astral sciences

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Howard L. Goodman

Dynamic Domains of Activity in Early Chinese Harmonometrics and Their Astral Crossovers and Caesuras

Abstract: Other papers associated with the SAW conference have looked at Li Chunfeng's historiography—its structure and use of precedents. This has shown us especially how the seventh century saw harmonics (or harmonometrics) through a lens of a historiography of science. Li Chunfeng emphasized the bridging power of number and how number theory and specific values could cross into calendro-astronomy. His rhetoric used accounts of past debates and catalogs of recovered instruments in the context of archeo-harmonics. I wish to turn a bit in another direction, away from harmonometrics seen through seventh-century historiography, and add concretion to the activities themselves by presenting a set of historical incidents from other sources, spanning roughly Western Han through the fifth century AD. The goal is to show that harmonometrics was in fact a known and supported form of institutional and private inquiry that contained the same sort of debate, agonistic confrontation, use of historical/textual precedent, and programs of empirical tests and data as did calendro-astronomy. In addition, the sources bring out networks of practitioners. I comment on what I see as motivations for harmonometric practices, such as establishing an absolute pitch, a resulting pursuit of modal bitonality and transposition in music, the complete shift to aerophones to accomplish required research, the influence of numeric patterns and specific numbers in calendro-astronomy, and how Li Chunfeng's archeometrological take on Xun Xu produced a new embedment for the standard rule—namely, instead of the span of the palm, or other body parts (“embodiment”), the standard-rule became historically fixed and named for the legendary “Zhou,” its antique, even antiquarian, “body”.