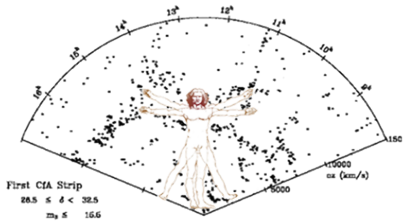

IL CIELO COME STRUMENTO
SECONDO CONGRESSO NAZIONALE DI ASTRONOMIA CULTURALE

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Rites, Stars, and Architecture: An Astronomical Reinterpretation of the Orientation of the Temples of Akragas

Monday 10 November 2025 13:00 (30 minutes)

This contribution offers a concise reassessment of previous studies concerning the orientation of the temples in the ancient Greek colony of Akragas, whose construction dates range from the late 6th century to the second half of the 5th century BCE.
Challenging the adequacy of the prevailing 'topographical'or 'stellar'explanations proposed by earlier academics, we have undertaken a new investigation grounded in astronomical calculations. These calculations were validated using the NASA/Jet Propulsion Laboratory Ephemerides portal of the California Institute of Technology and subsequently corroborated through the use of the professional software The Sky X, enabling a reconstruction of the ancient sky as it would have appeared during the historical period in question.
The data thus obtained, when considered in conjunction with a detailed analysis of the topographical context in which the sacred buildings were erected, served as the foundation for our inquiry. The minimal orographic challenges encountered—amounting to mere centimeters—suggest that the architects of the Akragas temples could have readily achieved precise East–West alignments. This observation implies that the chosen orientations were not dictated solely by urban layout constraints, but rather by additional, perhaps symbolic or ritual, considerations.
Our hypothesis posits that such orientations were deliberately aligned with key astronomical events, particularly those corresponding to moments of profound cultural and religious significance within Greek society. It is within this framework that we investigated the possibility of alignments linked to the solar calendar (specifically the spring equinox) and their concordance with the lunar calendar (namely, the first new moon following the spring equinox).

REFERENCES

AVENI, A.F. and ROMANO G. 2000: Temple Orientations in Magna Graecia and Sicily. Journal for the History of Astronomy, 31, 1–57.
HANNAH, R., MAGLI, G. and ORLANDO, A. 2017: Astronomy, topography and landscape at Akragas'Valley of the Temples. Journal of Cultural Heritage 18, 1–9.
HANNAH, R., MAGLI, G. and ORLANDO, A. 2018: The role of urban topography in the orientation of greek temples: tha cases of Akragas and Selinunte. Mediterranean Archaeology and Archaeometry, 16 (4), 213-217.
SALT, A.M. 2009: The astronomical orientation of ancient Greek temples. PloS One, 4(11), 1-5.
SALT, A.M. 2010: An analysis of astronomical alignments of Greek Sicilian Temples. Alun Salt, The Centre for Interdisciplinary Science, University of Leicester, preprint arXiv:1001.3757.

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