

Reviving Indigenous Star Names of the Middle East: Cultural Heritage in Modern Astronomy

Mohammad Sadegh Faghanpour ^{*1,2} and Saeed Jafari^{†1,3,4,5}

¹IAU OAE National Astronomy Education Coordinator for Iran, Tehran, Iran

²IAU Working Group on Star Names, International Astronomical Union

³International Decade of Indigenous Languages (IDIL 2022–2032), UNESCO

⁴Department of Linguistics, University of Kurdistan, Sanandaj, Iran

⁵IAU Commission C5 Cultural Astronomy, International Astronomical Union

Abstract

This review examines the revival of indigenous Middle Eastern star names as a resource for astronomy education and cultural preservation. It draws on the IAU Catalog of Star Names and recent reports of the IAU Working Group on Star Names (WGSN), considering 230 officially adopted names classified here according to Arabic, Persian, Sumerian, Hebrew, Turkish, Akkadian and Coptic origins. The review also describes educational infographics that combine astrophysical parameters with historical and linguistic context and were disseminated primarily through social media. Recent WGSN activity shows that standardisation now proceeds alongside the documentation of variant names, etymologies, cultural transfer, and visual traditions. Middle Eastern star names are therefore relevant to both scientific nomenclature and the preservation of intangible astronomical heritage. Their educational use is strongest when an adopted name is presented together with its historical source, linguistic development, and astronomical identification rather than as an isolated label.

Keywords: *cultural astronomy, star names, indigenous asterisms, astronomical nomenclature, intangible astronomical heritage*

1. Introduction

The night sky of the Middle East preserves a rich cultural heritage in indigenous star names, many of which have gradually faded from common use in modern astronomy education. In the catalogue snapshot reviewed for this article, 230 of more than 512 officially adopted names were assigned Middle Eastern origins and represented Arabic, Persian, Sumerian, Turkish, Hebrew, Akkadian and Coptic linguistic traditions. Reference works on modern star names show that many familiar forms entered scientific use through complex histories of translation, transcription and spelling standardisation (Kunitzsch & Smart, 2006). Reviving these names through educational materials can connect astronomy with history, language and cultural identity.

The WGSN was established to reduce ambiguity in scientific publications while preserving historical and cultural stellar nomenclature. Its recent work has moved beyond the standardisation of commonly used spellings toward the documentation of cultural variants, etymologies and names drawn from underrepresented traditions (Hoffmann et al., 025a). Research reported in 2025 further demonstrates that names and constellation figures often record cultural transfer and transformation across Arabic, Babylonian, Greek, Indian and Persian contexts (Hoffmann et al., 025b). This wider historical frame provides the basis for reviewing the Middle Eastern material and its educational use.

2. Review Scope and Educational Representation

2.1. Source Base and Classification

The review uses the IAU Catalog of Star Names, WGSN etymological documentation and the two recent accounts of the Working Group's activities and research findings (Hoffmann et al., 025a,b). Names

*ms.faghanpour@gmail.com, Corresponding author

†saeed.jafari72@gmail.com

were grouped according to their documented linguistic and cultural origins. The categories were treated cautiously where an etymology remains uncertain or a name exists in several historical forms, since the WGSN describes its etymological record as a living resource that is revised when stronger evidence becomes available (Hoffmann et al., 025a).

2.2. Infographic Design and Dissemination

The reviewed educational materials use a standardised infographic template developed in Adobe Photoshop. Each infographic combines the constellation name and Hipparcos identification with apparent magnitude, spectral type, mass, radius, temperature and distance, followed by a short account of etymology and cultural context. The materials were disseminated mainly through social media for educators, students and the general public. Audience responses are mentioned only as contextual observations; they were not collected through a formal evaluation and are not treated here as evidence of educational effectiveness.

3. Middle Eastern Names in the IAU Catalogue

The catalogue snapshot contains 230 adopted names classified as Middle Eastern in origin, approximately 45% of the names reviewed for October 2025. The distribution includes 209 Arabic names, 7 Persian names, 6 Sumerian names, 3 Coptic names, 2 Hebrew names, 2 Turkish names and 1 Akkadian name. Arabic therefore dominates this group, a pattern consistent with the WGSN's broader etymological review and with the historical transmission of stellar nomenclature through Arabic astronomical literature (Hoffmann et al., 025a, Kunitzsch & Smart, 2006).

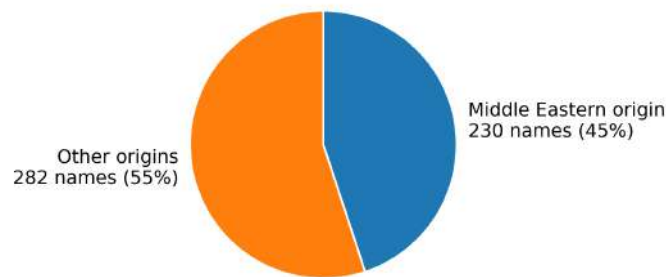


Figure 1. Proportion of adopted star names classified in this review as Middle Eastern in origin, October 2025.

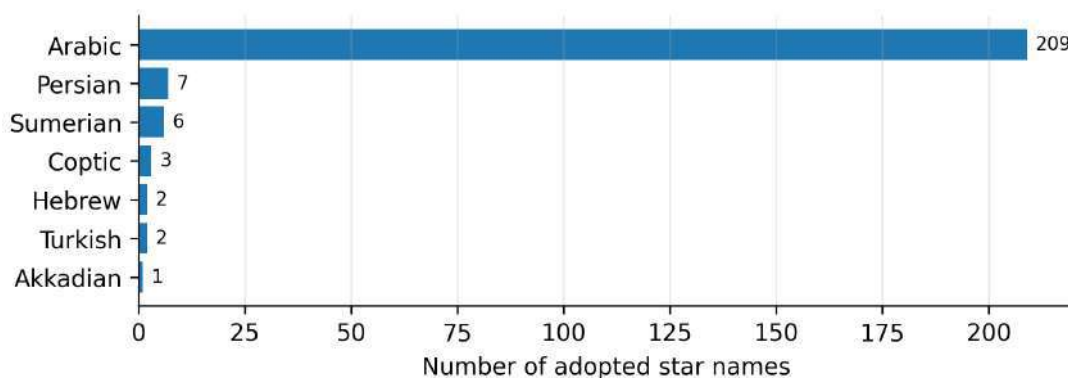


Figure 2. Distribution of Middle Eastern star names by linguistic and cultural origin.

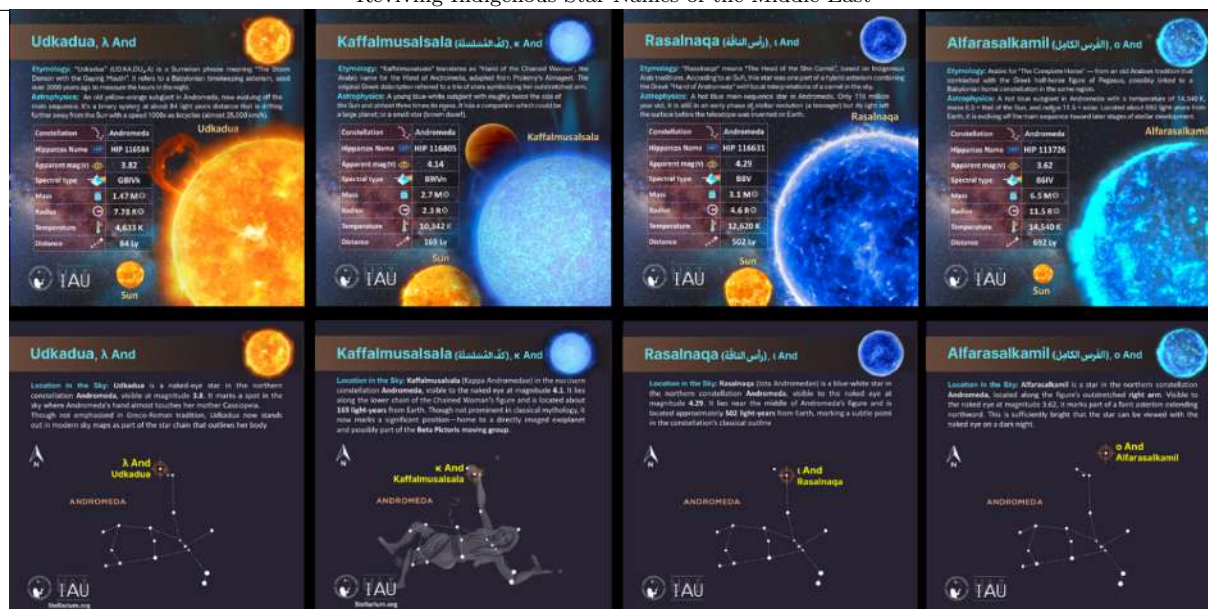


Figure 3. Examples of educational infographics developed for indigenous star names.

4. Discussion

The reviewed material highlights the historical role of Middle Eastern civilisations, especially the scholars and observational traditions through which earlier astronomical knowledge was preserved, translated and reorganised. Indigenous star names retain mythological, linguistic and historical layers of cultural memory, yet their value lies in more than the recovery of alternative labels. Recent WGSN practice separates official standardisation from the broader documentation of heritage: the All Skies Encyclopaedia records etymology, transformation, cultural transfer and visual representation for adopted and non-adopted names alike (Hoffmann et al., 025a,b). Educational resources should follow the same distinction and indicate uncertainty where derivations remain disputed or appear in several historical variants.

5. Future Directions

Future development may include a multilingual catalogue of Middle Eastern star names, an open-access educational database and collaboration with cultural and educational organisations. The WGSN's current encyclopaedia and naked-eye catalogue initiatives offer an appropriate scholarly framework for such work (Hoffmann et al., 025a,b). Additional resources for schools and public outreach should connect each name with a traceable historical source, a clear astronomical identification and an explanation suited to the intended audience.

References

- Allen R. H., 1899, *Star Names: Their Lore and Meaning*. New York: G. E. Stechert
- Hoffmann S. M., Vickers D., Mamajek E., et al. 2025a, *Journal of Astronomical History and Heritage*, 28(1), 280
- Hoffmann S. M., AlAjaji B. B., Shylaja B. S., et al. 2025b, *Journal of Astronomical History and Heritage*, 28(4), 1026
- Kunitzsch P., Smart T., 2006, *A Dictionary of Modern Star Names: A Short Guide to 254 Star Names and Their Derivations*. Sky Publishing, Cambridge, MA
- Vickers E., et al. 2006, WGSN Task Group for Etymologies