

COMMISSION C4

WORLD HERITAGE AND ASTRONOMY

*PATRIMOINE MONDIAL
ET ASTRONOMIE*

IAU Division C Inter-Commission C1-C3-C4

COMMISSION C4 WG4

ETHNOASTRONOMY AND INTANGIBLE ASTRONOMICAL HERITAGE

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TRIENNIAL REPORT 2018–2021

1. History

At the 2018 IAU meeting in Vienna, the IAU C1-C4 WG on Intangible Astronomical Heritage became the WG on *Ethnoastronomy & Intangible Heritage*. The aim of this WG is to provide an avenue for recording, preserving, and safeguarding culturally specific Knowledge Systems and traditions related to astronomy. This includes intangible heritage, such as language, oral tradition, song, dance, and social customs relating to astronomy.

2. Target Areas of Research Focus

The WG identified six (6) major areas regarding intangible heritage with respect to ethnoastronomy to be addressed: Language, Oral Tradition (stories and narratives), Music (including Song and Dance), Knowledge Systems, Cultural Practices (such as navigation and ceremony), Artistic Representation (all forms of art and craft, both tangible and intangible). These form significant areas of focus within the WG and member expertise. During the previous triennium, we have engaged in a collaborative process of research and publications outputs that have led to 24 refereed publications, 1 book contract, and several non-refereed and popular articles.

3. WG Goals

Goals include UNESCO heritage recognition, preservation through government and regulatory bodies, and finding ways to preserve this, such as reducing light pollution, access to language and culture, education, and recoding (where appropriate and permissible) traditions such as story, song, and dance. Work was delayed by the COVID pandemic but is back on track.

4. Publish a collaborative journal paper on Intangible Astronomical Heritage

This paper will outline the types, and importance of, *Intangible Heritage* (IH), the requirements and process for submitting heritage applications, how to protect IAH, provide a few case studies, and discuss actions and plans for the future.

5. Populate UNESCO Portal with case studies and Social Media Campaign

Identification of six case studies (one for each category) to populate the UNESCO web portal and develop a way for related stakeholders to upload their own content for inclusion. We will engage in a social media campaign to get our results and ideas out to the public. We will then explore the possibility of a documentary to be filmed on the subject.

6. Host an international IAU-sponsored meeting & publish an edited volume

This meeting will focus on implementing the key issues laid out in the journal paper, including a number of case studies. We will seek status as a funded IAU Symposium, with an emphasis on input from Indigenous researchers and stakeholders. We will publish an edited volume similar to the one on “tangible heritage” published in 2010 (IAU symposium through Cambridge University Press). It will include in-depth case studies from a wide range of geographic and subject areas with strong representation from Indigenous researchers and communities.

7. Developments

IAU WG members are involved in current exhibitions that will pave the way for further development of the WG goals and pave the way for an IAU sponsored symposium. This includes the “*One Sky, many Worlds*” a travelling Indigenous Astronomy art and knowledge exhibition, to be launched in 2021 in Ottawa, Canada. Jarita Holbrook has agreed to take over Chair of the WG from Duane Hamacher for the next Triennium.

8. Publications

Core research leading to WG outcomes has been published in a variety of academic journals and books and have been included in national curricula in member countries (such as Australia). These will be further developed for the case studies in the edited volume, as well as core content for the symposium.

The following publications represent a selection of those involving the development of ethnoastronomy and intangible heritage in its various forms. Publications are organised by year published with WG Members in bold face.

8.1. Publications 2021

- Bush, M. & **D. W. Hamacher** (2021) *World Developments: Australasian and Oceanic Cultures*. In Clifford Cunningham (ed) “A Cultural History of the Universe in the Age of Enlightenment.” Volume 4. London: Bloomsbury Publishing. In press.

- **Hamacher, D. W.**; De Napoli, K. & B. Mott (2021) Whitening the Sky: light pollution as a form of cultural genocide. *Journal of Dark Sky Studies*, Vol. 1, in press. (Preprint: arXiv:2001.11527)
- Lee, A. S.; Maryboy, N.; Begay, D.; Buck, W.; Catricheo, Y.; **Hamacher, D. W.**; **Holbrook, J.**; Kimura, K.; Knockwood, C.; Painting, T. K. & M. Varguez (2021) Best Practices and Protocols for Including Indigenous Astronomy in the Planetarium Setting. *Proceedings of the International Planetarium Society*, Vol. 25, pp. 69–77.
- **Orchiston, W.** & M. Vahia (eds.) (2021) *Exploring the History of Southeast Asian Astronomy: A Review of Current Projects and Future Prospects and Possibilities*. Cham, Switzerland: Springer International Publishers.

8.2. Publications 2020

- Gamarra, M. R.; **Gullberg, S. R.**; Estrazulas, M.; Horvath, J. & C. Zen (2020). Complementary duality of the Inca’s cosmovision: An astrophysics perspective. *Astronomische Nachrichten*, Vol. 340(9–10), pp. 817–827.
- **Gullberg, S. R.** (2020). Cultural astronomy and educational opportunities. *Astronomische Nachrichten*, Vol. 340(9–10), pp. 810–816.
- **Gullberg, S. R.**; **Hamacher, D. W.**; **López, A. M.**; **Mejuto, J.**; Munro, A. M. & W. Orchiston (2020). A Cultural Comparison of Dark Constellations of the Milky Way. *Journal of Astronomical History and Heritage*, Vol. 23(2), pp. 390–404.
- **Hamacher, D. W.** (2020) Native American Traditions of Meteor Crater, Arizona: Fact, Fiction, or Appropriation? *Journal of Astronomical History and Heritage*, Vol. 23(2), pp. 375–389.
- **Hamacher, D. W.**; Leaman, T. M.; Fuller, R. S. & D. Bosun (2020) Solstice and solar position observations in Australian Aboriginal and Torres Strait Islander traditions. *Journal of Astronomical History and Heritage*, Vol. 23(1), pp. 89–99.
- **López, A. M.** (2020) “Cultural astronomy perspectives on ‘development’.” In *Astronomy in Focus – XXX, Proceedings IAU Symposium No. XXX, 2018*, ed. by M. T. Lago, Focus Meeting 15: Astronomy for Development, IAU, XXX General Assembly, pp. 580–581.

8.3. Publications 2019

- David, B. & **D. W. Hamacher** (2019). *Environment and Landscape*. In The Encyclopedia of Archaeological Sciences, edited by S. L. Lopez Varela. John Wiley & Sons.
- **Gullberg, S. R.** (2019). Cosmology of the Incas: Effects of light and shadow. *Astronomische Nachrichten*, Vol. 340(1–3), pp. 23–29.
- Halkare, G.; Dahedar, P.; **Orchiston, W.** & M. N. Vahia (2019) Astronomy of the Pardhi Tribe of Central India. *Journal of Astronomical History and Heritage*, Vol. 22(1), pp. 179–194.
- **Hamacher, D. W.**; Barsa, J.; Day, R.; Passi, S. & A. Tapim (2019) Indigenous use of stellar scintillation for predicting weather and seasonal change. *Proceedings of the Royal Society of Victoria*, Vol. 131(1), pp. 24–33.
- **Hamacher, D. W.** & K. Banks (2019). “The Planets in Indigenous Australian Traditions.” In *Oxford Research Encyclopedia of Planetary Science*, edited by Peter Read. Oxford University Press.
- **Holbrook, J. C.** (2019) “The Square Kilometre Array Art Exhibition.” In *Visualizing Skyscapes*, edited by Daniel Brown & Liz Henty, London: Routledge.
- Leaman, T. M. & **D. W. Hamacher** (2019) Baiami and the emu chase: an astronomical interpretation of a Wiradjuri Dreaming associated with the Burbung. *Journal of Astronomical History and Heritage*, Vol. 22(2), pp. 243–255.

- **Mejuto, J.** & E. Rodas-Quito (2019) “Etnoastronomía en Honduras: Retos y desafíos.” In *Libro de resúmenes del I Congreso de Investigación en Ciencias Espaciales*, pág. 29, UNAH, Tegucigalpa.
- **Orchiston, W.** & J. Drummond (2019) The Tarawera volcanic eruption in New Zealand and Maori cometary astronomy. *Journal of Astronomical History and Heritage*, Vol. 22(3), pp. 521–535.

8.4. Publications 2018

- Guedes, C.; **Hamacher, D. W.**; Barsa, J.; Day, E.; Day, R.; Passi, S. & A. Tapim (2018) Death and Maier: meteors and death rites in the eastern Torres Strait. *Australian Journal of Indigenous Issues*, Vol. 21(3), pp. 39–59.
- **Hamacher, D. W.** & R. R. Visuvanathan (2018) Twin Suns in Australian Aboriginal Traditions. *Journal of Astronomical History and Heritage*, Vol. 21(2/3), pp. 107–114.
- **Hamacher, D. W.** (2018) Observations of red-giant variable stars by Aboriginal Australians. *The Australian Journal of Anthropology*, Vol. 29(1), pp. 89–107.
- **Hamacher, D. W.**; Tapim, A.; Passi, S. & J. Barsa (2018) “Dancing with the stars: astronomy and music in the Torres Strait.” In *Imagining Other Worlds: Explorations in Astronomy and Culture*, edited by Nicholas Campion & Chris Impey. Sophia Centre Press, pp. 151–161.
- Leaman, T. M. & **D. W. Hamacher** (2018) A methodology for testing horizon astronomy in Australian Aboriginal cultural sites: a case study. *Mediterranean Archaeology and Archaeometry*, Vol. 18(4), pp. 431–438.

Duane W. Hamacher

Chair of C4-C3-C1-WG4 Ethnoastronomy and Intangible Astronomical Heritage

March 2021