

THE MARRIAGE OF ASTRONOMY AND CULTURE: THEORY AND METHOD IN THE STUDY OF CULTURAL ASTRONOMY

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NOTES ON CONTRIBUTORS

Editors

Liz Henty left her accountancy career to take the Cultural Astronomy and Astrology MA at Trinity Saint David University of Wales, where she achieved a distinction for her dissertation entitled 'An Examination of Possible Solar, Lunar and Stellar Alignments at the Recumbent Stone Circles of North-East Scotland. After taking some short archaeology courses at Aberdeen University, she is now a PhD Research Student at Trinity Saint David University of Wales, researching the divide between the disciplines of archaeology and archaeoastronomy. She has presented papers at SEAC and the Theoretical Archaeology Group conferences and is a contributor to *Skyscapes in Archaeology* edited by F Silva and N Campion (Oxbow, 2015). She is co-founder and co-editor of the *Journal of Skyscape Archaeology*.

Bernadette Brady has a PhD in Anthropology (2012) and MA in Cultural Astronomy and Astrology (2005). She is currently a tutor in the Sophia Centre for the Study of Cosmology in Culture at the University of Wales Trinity Saint David, UK. Her research interests are in the cultural significant of astrology both historically as well as in contemporary life, the cultural influence of stars and the religious and cultural significant of star phases. Her journal papers include the cultural astronomy contained in examples of Egyptian astronomy (Oxbow, 2012), the orientation of the Solstitial Churches of North Wales (JSA, 2017) and the solar discourse in Cistercian Welsh abbeys (Citeaux, 2016). Apart from journal papers she has also authored *Cosmos, Chaosmos and Astrology* (Sophia Centre Press, 2014). She currently lives in Bristol, UK.

Darrellyn Gunzburg teaches in the Sophia Centre for the Study of Cosmology in Culture, Faculty of Humanities and Performing Arts, at the University of Wales Trinity Saint David. She received her PhD from the University of Bristol (2014) with a thesis entitled 'Giotto's Salone: An Astrological Investigation into the Fresco Paintings of the First Floor Salone of the Palazzo Della Ragione, Padua, Italy'. Her research interests lie in the art historical and visual astronomical exploration of frescos in medieval Italy, the orientation of abbey churches in Wales, the UK, and Europe, and pilgrimage. She is the editor of *The Imagined Sky: Cultural Perspectives* (Equinox, 2016) and has written extensively for *The Art Book* (Wiley-Blackwell) and *Cassone: The International Online Magazine of Art and Art Books*.

Frank Prendergast is an Emeritus Research Fellow in the Dublin Institute of Technology and a post-graduate of Trinity College Dublin. He gained a PhD in 2011 from University College Dublin, specialising in the spatial analysis of Neolithic passage tombs. Recent contributions to interpretative archaeology

include publications associated with the discovery of a major Iron Age temple site in Lismullin, Ireland. He has contributed three chapters to the *Handbook of Archaeoastronomy and Ethnoastronomy* published by Springer Reference as well as continuing to write academic papers, invited book chapters and giving public lectures. A more recent venture is in the area of promoting the conservation of the dark sky at landscapes of archaeological importance. In that role, he is a scientific adviser to several heritage organisations. For 2017, he is a faculty member of the International Space University and contributing a Cultural Astronomy element to their Humanities Curriculum.

Fabio Silva is a Marie Skłodowska-Curie Fellow at the Catalan Institute for Human Palaeoecology and Social Evolution (Tarragona, Spain) and a tutor at the Sophia Centre (University of Wales Trinity Saint David), where he is responsible for the 'Skyscapes, Cosmology and Archaeology' module. He is co-founder of the *Journal of Skyscape Archaeology* and received the Fifth Carlos Jaschek Award from SEAC in 2016. He also co-edited several books, including *Skyscapes: The Role and Importance of the Sky in Archaeology* (Oxbow, 2015) and *The Materiality of the Sky* (Sophia Centre Press, 2016).

Contributors

Nasser B. Ayash studied at the Electrical Engineering Department, University of Patras between 2004 and 2010. He is currently enrolled at the University Of Ioannina, School Of Philosophy Department for History And Archaeology. He works as a Language Facilitator and IT Consultant in the development of an integrated software solution in Ministries in Qatar and Greece. His interests include amateur astronomy and linguistics. He has presented archaeoastronomy papers at the Amateur Astronomy club 'Orion' at the University of Patras, 'Astral Aspects of Minoan and Mycenaean Religion' at the European Society for Astronomy in Culture (SEAC) Conference in Rome 2015, 'Arabic Astronomy in the Middle Ages' at the 9th Greek Amateur Astronomy Conference at Sparti in 2015 and 'Stars in the Minoan Religion' at the Graduate Archaeology Oxford 'GAO' Conference in 2016.

Juan Antonio Belmonte is an astronomer at the Instituto de Astrofísica de Canarias (Tenerife, Spain) where he has lectured history of astronomy and archaeoastronomy and investigates exoplanets, stellar physics and cultural astronomy. He has published or edited a dozen books and authored nearly 200 publications on those subjects. He was Director of the Science and Cosmos Museum of Tenerife (1995–2000), President of SEAC (2005–2011) and President of the Spanish Time Allocation Committee (CAT) of the Canarian observatories (2003–2012). He received the SEAC Carlos Jaschek award in 2012 for his contributions to the discipline. He is now advisory editor of the *Journal for the History of Astronomy*. He has performed extensive research on the astronomical

traditions of ancient civilizations, notably ancient Mediterranean cultures and Egypt. Born in Murcia (Spain) in 1962, he studied physics and got his master-thesis in 1986 at Barcelona University and obtained his PhD on Astrophysics at La Laguna University in 1989.

Liana De Girolami Cheney is President of the Association for Textual Scholarship in Art History, presently a Visiting Scholar in Art History at the University of Bari, Italy, and at the University of Coruña, Spain, and emerita Professor of Art History from UMASS Lowell. She received her PhD in Italian and Baroque Art from Boston University, MA. Dr. Cheney has written several books on Italian Renaissance, Mannerism, Pre-Raphaelite Art and Women's Art; notably Botticelli's Neoplatonic Images; Giorgio Vasari's Teachers: Sacred and Profane Art; Giorgio Vasari's Artistic and Emblematic Manifestations; Self-Portraits by Women Painters; Pre-Raphaelitism and Medievalism in the Arts; and Edward Burne-Jones' Mythological Themes. She received an Award for Excellence in Scholarly Research and Publication from SECAC on her publication on 'Leonardo da Vinci's Annunciation: The Holy Spirit', in *Artibus et Historiae* (2011): pp. 1–16.

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J. Anna Estaroth graduated from the University of Wales Trinity Saint David with an MA in Cultural Astronomy and Astrology in 2017. Her dissertation topic was the Clava Cairns in Inverness-shire where she examined the role of the Major lunar limit in locating the ritual centre at Balnuaran of Clava, by exploring the topographical significance of neighbouring river systems. Considerations of darkness and light were a theme that developed from her research.

Benito Vilas Estévez is an archaeologist with an MA in Cultural Astronomy and Astrology from the University of Wales, Trinity Saint David and an MSc in Archaeology from the University of Santiago. He has carried out studies on megalithic astronomy and other issues related to cultural astronomy.

David Fisher has a career in information technology and his lifelong interests in astronomy and archaeology turned into a quest for in-depth analysis, while holding the post of Chief Information Officer for a deepwater archaeological shipwreck recovery company. He devised a method of stratifying artefacts as they were recovered from 1800 feet below sea level. During this time he undertook a PhD in astro-archaeology at the University of Wales, utilising computer technology modelling to assess the astronomical significance of megalithic sites. Papers

published on this topic include: ‘Employing 3-Dimensional Computer Simulation to Examine the Celestial Dating of Scottish Megalithic Sites’ in *Ancient Cosmologies and Modern Prophets*, I. Šprajc, P. Pehani (eds), (Slovene Archaeological Society, 2013) and ‘Restructuring the World of Megalithic Sites and Animating Astronomical Phenomena through 3D Computerization’ in *Astronomy and Power: How Worlds Are Structured*, M. and B. Rappenglück, N. Campion, F Silva (eds), (BAR, 2016).

Roslyn M. Frank is Professor Emeritus at the University of Iowa. She has published extensively on the history of ‘Western’ constellations as well as Eurasian skylore, focusing particularly on projections of the belief that humans descended from bears onto the landscape and skyscape. Recent publications include ‘Sky Bear Research: Implications for “Cultural Astronomy”’ in *Mediterranean Archaeology and Archaeometry* 16, no. 4 (2016): pp. 343–50, and ‘Bear Ceremonialism in Relation to Three Ritual Healers’ in Enrico Comba and Daniele Ormezzano, eds., *Uomini e Orsi: Morfologia del Selvaggio* (Torino: Accademia University Press, 2015), pp. 41–122. Her research areas are archaeo- and ethnoastronomy and ethnomathematics as well as cultural linguistics, cognitive linguistics, ethnography and anthropological linguistics with a special emphasis on the Basque language and culture. For additional information, see, <http://uiowa.academia.edu/RoslynMFrank>.

A. César González García has a PhD in Astrophysics (2003; Groningen, The Netherlands) and he is currently doing research in Cultural Astronomy at the Institute of Heritage Sciences in Santiago de Compostela (Spain). He has done extensive fieldwork on megalithic monuments in The Netherlands, Germany, Bulgaria, the Near East and the Iberian Peninsula. He has also done fieldwork on classical cultures in Anatolia, the Levant and Western Europe. His main research lines are centred on the perception of the sky in classical cultures and megaliths, the possible astronomical and landscape relations of Iron Age sanctuaries and the study of the orientation of Roman cities.

Steven R. Gullberg earned a PhD in astronomy from James Cook University under the supervision of J. McKim Malville. He is an Assistant Professor of Interdisciplinary Studies for the University of Oklahoma where he serves as its College of Professional and Continuing Studies Lead Faculty for Natural Science, as well as being the Lead Faculty for the Master of Arts Integrated Studies Program and the Bachelor of Arts Liberal Studies Program. Steven teaches astronomy and other natural science courses, and is also a member of the International Astronomical Union (IAU). His doctoral research interests focused on the astronomy of the Incas and his Masters research at the University of Oklahoma involved Babylonian astronomy and the Babylonian Astronomical Diaries. His work in archaeoastronomy continues and he has authored a number of

associated research papers. He is presently working to further advance the fields of archaeoastronomy and Native American astronomy in the United States.

Tony Hull is Adjunct Professor of Physics and Astronomy at the University of New Mexico. Graduate and undergraduate studies were at the University of Pennsylvania, including an inspirational archaeology course there taught by Fro Rainey. In addition to astrophysics and developing space missions both at NASA and in industry, he has been an active researcher over several decades in Archaeology and Cultural Astronomy. This work has been largely in coastal California and the Cozo Range working with UCLA, and also in Chaco Canyon, NM, principally a comprehensive study of early Navajo manifestations at the eastern end of the Canyon. He chaired the 2011 Maxwell Museum Conference ‘Astronomy and Ceremony in the Prehistoric Southwest’. In addition to fieldwork, mapping, recording and evaluating, he has developed theoretical models for cultural astronomy including practical methods for determining cardinality, the date of the equinox and also Monte Carlo criteria for research design.

Stanislaw Iwaniszewski is Professor of Archaeology at the Division of Postgraduate Studies at the Escuela Nacional de Antropología e Historia in Mexico City and archaeologist in the State Archaeological Museum in Warsaw. He specialises in the areas of archaeology and identity, landscape archaeology and archaeoastronomy. He was President of SEAC (1999–2005) and ISAAC (2007–2014). He has presented and published many papers on archaeoastronomy, both on the discipline itself and extensive case studies of monuments in South America and Eastern Europe. In 2015, he authored a monothematic cycle of publications on the theoretical and methodological aspects of research in archaeoastronomy. He is currently researching ‘The Lunar Theory among the Maya’ and ‘The Starry Sky – Animated Sky’.

Tore Lomsdalen has an MA in Cultural Astronomy and Astrology from the University of Wales Trinity Saint David. For his dissertation he conducted fieldwork research on the possible astronomical intentionality behind the prehistoric Mnajdra Temple complex on Malta which was published in 2014; *Sky and Purpose in Prehistoric Malta; Sun, Moon and the Stars of the Temples of Mnajdra* (Sophia Centre Press). His research into the Maltese temples, archaeoastronomy and cosmology continues, and he has held various talks and given presentations on this topic in the last few years. He is currently a PhD student at the University of Malta, affiliated with the Department of Classics and Archaeology, researching cosmology in prehistoric Malta.

J. McKim Malville received his PhD in solar radio physics and for some 25 years published in solar astrophysics, emphasising observations of sun spots, flares, and the corona. During that time he published three books that indicated a growing interest in cultural astronomy: *A Feather for Daedalus: Explorations in Science*

and Mythology, The Fermenting Universe, and Time and Eternal Change. He has been a professor in the Department of Astrophysical and Planetary Science at the University of Colorado since 1973. After several trips to India, he decided to turn his attention to cultural astronomy and engaged in fieldwork in India, Egypt, the American Southwest, and Peru. He is particularly interested in applying alternate ontologies in the quest to understand what were people thinking when they invested so much time and wealth in their respective skylscapes. In addition to the University of Colorado, he has taught or engaged in research at the High Altitude Observatory, Lockheed Aircraft Corporation, James Cook University, and the universities of Sao Paulo, Oslo, and Wales Trinity Saint David.

Frances Joan Mathien received her PhD from the University of New Mexico and worked for the National Park Service from 1978 through 2005. After retiring from her position as an archaeologist who worked mainly with data from Chaco Canyon, New Mexico, she has continued as a volunteer to research the field schools that were held in the canyon from 1929 through 1942 and again in 1947. Currently she is an Adjunct Assistant Professor with the Department of Anthropology and Research Associate with the Maxwell Museum of Anthropology at the University of New Mexico. Her main research interests include the development of complex societies, exchange networks, sourcing of minerals (e.g., turquoise), and the history of archaeology.

Claude Maumené is an agronomist by training and studies as an independent scholar researching how protohistoric objects and monuments may have incorporated astronomical and calendrical knowledge in different cultural contexts in Western Europe. He uses the myths developed by different religions and cultures, to propose an interpretation of the iconography, and to support various theories. He is a member and administrator of the French Mythology Society and began the Cultural Astronomy and Astrology MA programme at the University of Wales Trinity Saint David in 2016.

Cherilynn Morrow received her PhD in solar astrophysics from the University of Colorado in 1988. She conducted graduate research at the National Center for Atmospheric Research and post-doctoral research at Cambridge University. While serving as a visiting scientist at NASA Headquarters in the early 1990s she began her award-winning work to integrate education and public outreach programmes into scientific research environments in space and Earth science. Her work expanded to integrating the arts and indigenous culture during subsequent leadership roles in science education at the Space Science Institute, the SETI Institute, Georgia State University (GSU), and the Aspen Global Change Institute (AGCI). Dr Morrow has supported interpretive and research programmes at Chaco Culture National Historical Park. This includes directing the Chaco Educator Institute in Astronomy (June 2008) and apprenticing with Andy Munro's archaeoastronomy research team, providing archival research and field support.

Andrew M. Munro received his PhD from James Cook University. He is an Adjunct Professor with the University of Oklahoma's College of Professional and Continuing Studies, and a graduate Project Supervisor for Swinburne University in Australia. He has conducted fieldwork-based archaeoastronomy research at Chaco Culture National Historic Park and outlying Chacoan Great Houses since 2007. His findings provide support for the idea that groups of people with varied cultural traditions collaborated at Chaco Canyon. They also reinforce the magnitude of cultural change at Chaco after 1100 CE.

John L. Ninnemann is Professor Emeritus, Department of Biology and former Dean of Natural and Behavioral Sciences and Professor of Biology, Fort Lewis College. His shows of astronomical photography include Canyon Spirits, Edge of the Cedars State Park, Blanding, UT 2004; Ancient Astronomy in the Southwest, Center of Southwest Studies, Fort Lewis College, Durango, CO February-October, 2012; Ancient Astronomy in the Southwest, Anasazi Heritage Center, Dolores, CO November 2012-March 2013; and One-Room Schoolhouses of Colorado, Mancos Visitors Center, Mancos, CO January-February, 2013.

Marianna Päivikki Ridderstad obtained her PhD in astronomy in 2015. Her doctoral thesis was the first one in the field of archaeoastronomy in Finland. Previously, she had completed a MSc degree in theoretical physics in 2002 and a LicPhil in astronomy in 2011. In archaeoastronomy, her research interests have varied from Minoan astronomical symbolism to the orientations of Neolithic monuments in Finland. Together with Dr Jari Okkonen from the University of Oulu, she discovered the astronomical orientations of the Neolithic Giants' Churches of Ostrobothnia in 2009. In addition to archaeoastronomy, her main subject of interest is astrobiology, which she has taught in the University of Helsinki since 2006.

Florian Schaukowitz is a Master's student in Visual Computing at the Vienna University of Technology. Currently finalising his thesis work under the supervision of Prof. Michael Wimmer, he has been a semi-regular contributor to Stellarium since 2014, mainly working on graphics-related issues and features. For the work on Stellarium, he has received two stipends from the ESA in the course of their 'Summer of Code in Space' programme.

Lionel Sims was Head of the Department of Anthropology, International Development, International Politics and Refugee Studies at the University of East London until his semi-retirement. He is Vice President of the European Society for Astronomy in Culture (SEAC) and is a lecturer for the Workers' Educational Association (WEA). He is a regular presenter at SEAC and other conferences and author of many inter-disciplinary papers and book chapters combining archaeoastronomy, archaeology, anthropology and mythology. A film of his research, Stonehenge Rediscovered, was commissioned by National Geographic

and has been broadcast worldwide. He is a member of the Stonehenge Round Table hosted by English Heritage and the Avebury Sacred Sites Forum hosted by the National Trust in his capacity as leader of the 'King's Drums' summer solstice performance group. He is a Stonehenge and Avebury guide for the tour company 'Ammoun Voyages', collaborates with the Basque cultural organization Jauzarrea and lectures widely.

Dragana Van de moortel-Ilić completed a MA in Cultural Astronomy and Astrology at the University of Wales Trinity Saint David, where she conducted research on cosmological elements in celestial-religious paintings in medieval Serbian churches. Her investigation focused on the paintings of the Sun, the Moon and planets in the Visoki Dečani monastery and the Bogorodica Ljeviška church in Kosovo as well as the Lesnovo monastery in FYR Macedonia. Dragana previously graduated from the Faculty of Natural Sciences and Mathematics at the University of Novi Sad, Serbia, where she held the position of research assistant in chemistry. From 1991 onwards she has worked as a freelance consultant. She lives and works in Ghent, Belgium, and is an active mentor at the Institute for Psychological Astrology and Psychoanalysis, IPAL, in Slovenia and at the Faculty of Astrological Studies, UK.

Michael Wimmer is Associate Professor and head of the Rendering and Modeling Group at the Institute of Computer Graphics and Algorithms at Vienna University of Technology (TU Wien).

Georg Zotti holds a PhD in Computer Sciences from Vienna University of Technology University and B.Sc. in Astronomy from Vienna University. He combines research interests in the history of astronomy, astronomical instruments (esp. the Astrolabe), Virtual Realities, Virtual Archaeology and Archaeoastronomy, forming what can be termed Virtual Archaeoastronomy. While researching the possible astronomical orientation of Neolithic Circular Ditch Systems in Lower Austria, he joined the Stellarium project in 2010 and enhances its applicability mostly towards simulation of historical and prehistorical astronomical events and skylscapes. He is currently one of the SEAC Vice Presidents.

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