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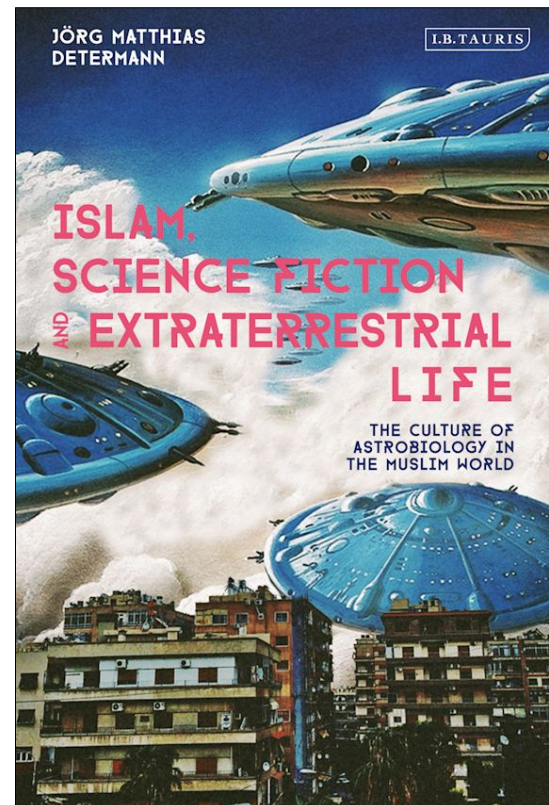
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***Islam, Science Fiction, and Extraterrestrial Life: The Culture of Astrobiology in the Muslim World*, by Jörg Matthias Determann. (London, I.B. Taurus, 2021). Pp. 269, ISBN 980-0-7556-0127-1 (hardback), 234 × 156 mm, US\$115.**

One of the big questions in the now well-documented plurality of worlds tradition (Dick, 1982; 1996; Crowe, 1986; Guthke, 1990) has been to what extent this important theme extends to non-Western cultures. In this book Jörg Determann, Associate Professor of History at Virginia Commonwealth University-Qatar, has given us an answer of sorts. Located in Qatar, and having had the advantage of Research Assistants fluent in a variety of languages, Determann covers texts, films, and other media on the subject of other worlds and other-worldly life in predominantly Muslim countries utilizing the Arabic, Malay, Persian, Turkish and Urdu languages. Needless to

say, the ability to analyze this literature provides new insights not previously widely known in the Western world. In this respect it serves a similar purpose to Determann's previous well-reviewed book *Space Science and the Arab World: Astronauts, Observatories and Nationalism in the Middle East* (I.B. Taurus, 2018).

While the Western tradition of plurality of worlds begins substantially with the ancient Greek atomists and Aristotle, moves on to medieval commentaries on Aristotle's *De Caelo*, and from there to the Copernican, Cartesian, and Newtonian traditions, eventually morphing into the astrobiology of the modern world, Determann's book begins with



a chapter on the 'Lord of the Worlds'. The first verse of the first sura of the Qur'an translates as "praise to God, lord of the worlds," and it is from this scriptural rather than scientific text that the Muslim tradition on the plurality of worlds seems to have begun. Determann finds that "... even strictly literal readings of the scripture seem to support the idea of the plurality of worlds ..." (page 10), where the meaning of "worlds" has evolved with time. Nor is it an obscure passage; the phrase "lord of the worlds" (rabb al-alamin) occurs 42 times in the Qur'an, and "worlds" by itself appears 73 times. Moreover, this first verse is part of the five obligatory daily prayers for Muslims. As Muzaffar Iqbal (2018), General Editor of the seven-volume *Integrated Encyclopedia of the Qur'an* has pointed out, this

passage and its prominence in daily Muslim life have given ample opportunity for massive commentary on the meaning of these words, commentary that ingrained the idea of other worlds into Islamic culture. Other passages in the Qur'an have only added to this commentary, among them "And among His Signs is the creation of the heavens and the earth, and the living creatures that He has scattered through them." (Qur'an 42:29, quoted on page 11).

Utilizing other worlds as evidence for the omnipotence and magnificence of a God who can create creatures throughout the Universe is an Islamic theme that resonates with the Western tradition, since other worlds as evidence of God's magnificence was one of the arguments in the natural theology tradition of the West in the seventeenth and eighteenth centuries. Nonetheless, although the Western tradition certainly addressed the relevance of Biblical Scripture to other worlds, and although the tradition of natural theology also supported multiple worlds, it is clear this was only a secondary role compared to the Muslim scriptural tradition. Not that commentary on natural philosophy was totally lacking among Islamic scholars. In the important process of the transmission of Greek knowledge to the Latin West via the Islamic civilization, the eleventh century philosophers al-Biruni and Avicenna (Ibn Sina) both penned commentaries on Aristotle's plurality of worlds passages in *De Caelo* (Hullmeine, 2019). Aside from these two thinkers, Determann does not elaborate on how many other such classical commentaries might exist in this more 'scientific' as opposed to theological tradition. Pending further research this may well mark a significant difference with the Western tradition.

While Determann's first chapter thus illuminates the origins of the plurality of worlds idea in classical Muslim literature, the remainder of the book is heavily weighted toward the modern era, since 1950, and the cultural diffusion of the idea of other worlds. Put another way, the 'culture of astrobiology' in the subtitle refers both to popular culture and the culture of science itself. Determann places both in the category of 'scientific imagination' in terms of their capacity to influence Islamic culture, arguing, with Holton (1998), that "... the 'scientific imagination' was not confined to people who would have self-identified as 'scientists' ..." (page 29). The book addresses intermittently what we might call scientific culture, ranging from Gavriil Tikhov's work on astrobotany in Kazakhstan in the 1940s (Briot, 2013) and Nozair Khawaja's work on astrobiology in Pakistan today, to exoplanet research such as the Qatar Exo-

planet Survey led by Khalid Alsubai that discovered several planets between 2010 and 2019. But the bulk of the book resonates more with Joel Achenbach's scintillating volume *Captured by Aliens* on the role of extraterrestrials in Western popular culture (Achenbach, 1999).

This does not lessen the fascination of the book. Who knew that modern Islamic culture is filled with alien science fiction literature and film, and with a substantial UFO tradition? Determann, himself influenced by science fiction from an early age, covers these aspects in subsequent chapters. Chapter 3 covers science fiction from a variety of Muslim countries, and poses questions such as whether the secularism of a country such as Turkey was more permissive of the scientific imagination than Islamism in Iran. He finds that while both countries imported science fiction blockbusters from the United States, in terms of home-grown movies where censorship had to be considered "Turkey produced vastly more science fiction movies than Iran did ..." despite their similar size in population (page 36). Chapter 5 covers representative science fiction novels and short stories.

Chapter 4 addresses the UFO theme, mainly from the 1960s onward. Placing the Muslim UFO tradition in the context of work in the West done by Eghigian (2014), Geppert (2012), and others showing that UFO sightings were a worldwide phenomenon by the end of the 1950s, Determann details not only UFO sightings in Muslim-majority countries, but also shows how they were occasionally tied to the 'jinn,' supernatural creatures discussed in Chapter 72 of the Qur'an. More than that, he shows how UFO religions arose both inside the United States in the form of the Nation of Islam and Nuwaubians, and in Muslim countries. Much of this has nothing to do with science, but it is indisputably part of the scientific imagination as Determann broadly defines it and as it has become embedded in popular culture. With UFO sightings now taken more seriously even by high-ranking officials in the United States, this chapter takes on added significance in the history of popular culture, if not in the history of science.

The Harvard cultural historian Karl Guthke argued three decades ago that the theme of a plurality of inhabited worlds was a 'myth', or even 'the myth' of the modern age, where the term 'myth' is used not in the narrow sense of something untrue but in the broad, positive sense of a symbolic tradition that defines how we understand ourselves (Guthke, 1990). Despite its emphasis on the modern era, Determann's claim rings true that "If the plurality of inhabited planets has been the 'myth of the modern age,' Muslims fully

participated in its creation.” (page 38). Demonstrating this is no small achievement in the history of ideas.

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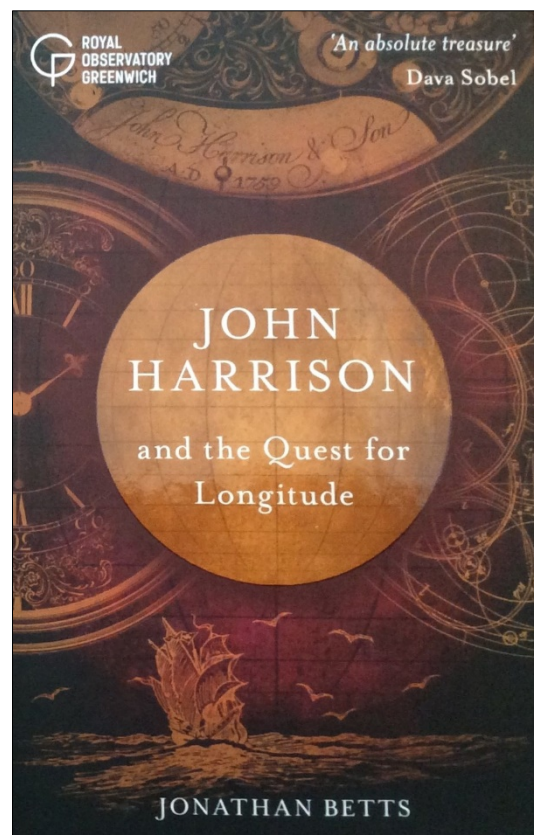
**John Harrison and the Quest for Longitude** by Jonathan Betts. (National Maritime Museum, Greenwich, 2020). Pp. 112. ISBN 1-906-36769-8 (hardback), 155 × 215 mm, US\$19.95.

Written by horologist and Royal Museums Greenwich Curator Emeritus, Jonathan Betts, this work provides an accessible and informative introduction to the story of John Harrison and his attempt to win the Longitude Prize. With many years of experience working with the collection and an impressive publishing record on marine chronometers, Betts has achieved the difficult task of compressing complex information into a format that is both comprehensible and entertaining to a reader new to the subject. Now in its Fifth Edition

since 1993, its lasting popularity is probably due to its accessibility – most other works are either more academic in nature or lacking in intellectual rigour.

The main narrative takes the reader on a journey through Harrison’s experience of his attempt to ‘win’ the Longitude Prize based on the timepieces he made to do so. It concludes by claiming that, regardless of the lack of formal acknowledgement as to the ‘win’, he nevertheless pioneered the marine timekeeper which enabled Britain to expand its influence overseas in the following century.

Divided into three parts plus a Conclusion, the books’ clear and helpful structure aids its



accessibility. The first two Parts can essentially be considered as an overall introduction to the main narrative and Part Three dives into the detail, providing the reader with a succinct overview of Harrison’s contributions.

Part One provides an introduction to clockwork and serves two purposes. Firstly, it provides readers with an understanding of basic horology and secondly it provides some context to Harrison’s contribution – to locate visitors in the timeline of horological development. Part Two provides an overview of the ‘Longitude Problem’, which helps readers to understand why Harrison worked for so long trying to solve it and why the Government was itself so keen to find a workable solution.