with his numerous papers and Milky Way photography which mapped out so clearly its structure, and the intricate dark patches and lanes of interstellar dust. We also remember him for the discovery of Barnard's Star, with its record-breaking proper motion.

Parallel Lives is always fascinating, and is a real work of reference. There are plenty of striking illustrations, including many not previously seen. Just in a few instances the publisher has slipped up with the placing of an illustration, or has left an unexplained gap, on part of a page. Nor has the publisher provided an index; given the enormous number of names (let alone events) scattered throughout the text, I would have considered one essential. Apart from its coverage of the lives of Lowell and Barnard, this book addresses so many aspects and personalities of the astronomy of a century ago that it must have a wide appeal to institutions and individuals. I can warmly recommend it. — Richard McKim.

Origins: The Cosmos in Verse, by Joseph Conlon (Oneworld), 2024. Pp. 158, 19·7 × 13 cm. Price £11·99 (hardbound; ISBN 978 086154 911 5).

At the 2024 Moriond cosmology meeting, Joseph Conlon, professor of theoretical physics at the University of Oxford, gave an invited talk on string theory, a topic rather far removed from the work of most of those at the conference. My impression, and that of many others, was that it was the best talk of the conference. Still looking much younger than his forty-three years and sometimes mistaken for a student, before a rather traditional career with BA and PhD from Cambridge then moving to Oxford as a Royal Society Research Fellow and moving up the ranks, Conlon had obtained a BSc in mathematics from the University of Reading (part-time alongside schoolwork). His popular-science book *Why String Theory?*[1] (near the top of my pile of books to read) was the *Physics World* Book of the Year in 2016. I was thus intrigued when I learned that he had written a book of poetry. The book contains two long poems about physics. Although currently out of fashion (though Max Tegmark does have an *ApJ* paper with the abstract in couplets[2]), poetry about science has a long tradition, going back at least to Lucretius's *On the Nature of Things*. Both Dante and Kepler wrote poetry about astronomy and cosmology[3,4], and Milton visited Galileo; Maxwell and Lovelace wrote poetry, and Keats was a licensed surgeon[5].

So what do we get? The first, somewhat longer, poem is 'Elements', which covers Big-Bang nucleosynthesis, star formation, basics of stars, Cecilia Payne (-Gaposchkin), B^{2}FH (ref. 6), the production of elements heavier than iron, life, and the author himself. 'Galaxies' starts off with some history of astronomy (especially the homogeneity of the Universe on large scales) before moving to inflation, General Relativity, and the cosmological constant, then moves down the scale to the subatomic realm and a discussion of quantum mechanics (important for inflation, spectroscopy, and X-rays, among other things) and its history, followed by a coda ("an extended simile") covering everything from Oxfordshire pubs to social networks to galaxies. Each poem is preceded by a preface of a page or so describing the structure and contents. The poems are followed by twenty-eight pages of notes adding more conventional scientific detail to the pages indicated (except for the coda in 'Galaxies'). Of course, like jokes, most poetry works best when nothing has to be explained, though some will find the notes helpful. A four-paragraph note on the formation of elements heavier than iron reads in part "…there are two possible ways the r-process can occur, both associated with exploding stars, and it is not yet fully known how each contributes to the formation of heavy elements in the present universe."

Though set in stanzas making the 'abab' rhyming scheme and the (mostly) iambic pentameter obvious, if formatted differently it would sound almost like normal prose — no mean feat! As such, this is a unique book, at least in modern times; I certainly haven't come across anything similar. At times, the style reminded me of Pope, Ginsberg, Whitman, Wordsworth, Blake, or Carroll (Lewis, not Sean). It is not clear to me who the target readership is: the union of those interested in poetry and physics? The intersection? Those who want to try everything? A nice gift for the person who has everything else? I'm not sure, but I think that many will get something out of this book. — Phillip Helbig.

References

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(5) K. Wright, *Physics Magazine*, **13**, 150, 2020.
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Cosmic Masers: Proper Motion toward the Next-Generation Large Projects, edited by Tomoya Hirota, Hiroshi Imai, Karl Menten & Yiva Pihlström (Cambridge University Press), 2024. Pp. 514, 25·5 × 18 cm. Price £120/$155 (hardbound; ISBN 978 0 009 39892 3).

The purpose of this review of IAUS 380 is presumably to give those who did not attend an impression and overview of the current state of the field. For this your reviewer is familiar enough with maser astronomy but has been away from the centre of action for some time. He therefore apologises for any misapprehensions in what follows. The overall personal impression is that work on, and using, celestial masers is very much in line with the astonishing change and progress in physics and astrophysics over the last half-century.

The structure of the volume reporting on IAUS 380 is that it comes in seven chapters relating to separate topics plus Chapter 8, 'Concluding Remarks'. Each chapter opens with a longer review paper and for the most part the succeeding papers report more individual work mentioned in the review. The work described in all of the chapters except Chapter 6 is concerned with the use of celestial masers as astrophysical probes rather than with the masers themselves. I attempt to make some comments about each chapter.

Chapter 1: 'Cosmic Distance Scale and the Hubble Constant'. There are just three papers in this chapter. The chief result is that megamasers may be used to measure the distance to some edge-on galaxies directly without using standard candles or distance ladders. H_0 for the late Universe is given as 73·9 km/s/Mpc with 4% precision. We are told that 1% precision is in prospect. This is important for work to resolve the so-called "Hubble Tension".

Chapter 2: 'Black-Hole Masses and the M-Sigma relationship'. The key point here is that super-massive black holes appear to be a feature of most, if not all, galaxies. Interesting relationships are discussed between these black holes, AGN, and rapid star formation in starbursts, which may co-evolve. Very high luminosities are made possible by the high energy-generation efficiency of mass accretion, tens of percent compared with 0·7% for nuclear fusion. However, all this is a bit obscure — literally. The surrounding medium is often optically thick to visible and IR radiation and the properties of the SMBH must be inferred from observations at sub-millimetre and longer wavelengths. Fortunately there