

Alice and Bob appear scattered through the text, though neither seems to be an author or an index entry.

Astronomers are obviously not the primary readership for this volume as we hardly ever encounter single atoms, let alone rubidium in $n = 49$ to 54 levels. It is, however, surely good for the soul to be reminded from time to time that there is a distinction between things nobody understands (the ratio of electromagnetic to gravitational forces) and things that other people understand and I do not! — VIRGINIA TRIMBLE.

FROM THE LIBRARY

Suns and Worlds, by W. H. (William Herbert) Steavenson (A & C Black Ltd.), 1933. Pp. 104, 18 × 12 cm. Price about \$25 for used copy from an on-line bookseller. (hardbound; no ISBN).

W. H. Steavenson (1894–1975) was a medical doctor, variously called Dr. Steave, Steave, and Old Steave (that last by Raymond Arthur Lyttleton) with a life-long love of visual astronomical observing with small-to-moderate-sized telescopes, some of his own design. Rather remarkably, he did this with only his left eye, the right one having been lost in a boyhood accident, and he abandoned observing at the age of 60 (1956), though he lived nearly another 20 years and participated in both RAS and the British Astronomical Association in his later years.

Dr. Steavenson's ADS publications come mostly from the *Journal of the BAA* and include many annual reports from his observatory in Norwood, but also this book. *Suns and Worlds: An Introduction to Astronomy* is a wonder of glorious English prose of a style I fear no one still knows how to write. Some sentences are quite long, but every word counts, is in the right place, and sometimes clarifies in a way that might easily have taken another whole sentence.

My copy once belonged to the Reverend R. Lacey Webb, who did not turn up in a very casual web search. The copy came with two bonus loose pieces of paper: a 28/11/71 clipping from the *Sunday Express* headlined “So maybe there is life on Mars”, reporting water vapour seen in the Martian atmosphere from *Mariner 9*; and a handwritten page of notes on Earth, Pluto, Mercury, and the Sun taken from the *Readers Digest World Almanac*. Written with a fountain pen in a rather old-fashioned spikey hand, the extract claims that the Sun has a central temperature of 36 million degrees C and an estimated survival of 16 000 million years. These are, to our minds, too large by factors of about 2 and 3, respectively. But we must not blame Dr. Steave for the mistakes.

What then did Dr. Steave have to say? He is very sound on day and night, eclipses, motions of planets, and the like, giving the objects concerned personal pronouns (*She* for the Moon and Venus; *He* for the Sun and the other planets). We are told that use of Eros to get the length of the AU has replaced transits of Venus, which no one will again attempt to observe. Well, we did for the most recent pair, but not to determine the length of the AU!

Skipping to ‘A Boundless Universe’ at the end, he accepts that the Universe is expanding, and that indeed some mathematicians had expected this. He worries that the expansion time-scale is much shorter than the time needed for stars to form and achieve their various current appearances. Nowhere, however, does he attempt to estimate ages or life expectancies for the Sun or any other stars. There is an evolutionary scenario laid out in ‘Other Suns’ and ‘Change and Motion in the Universe’, but no time-scale at all.

The evolutionary scenario is essentially H. N. Russell's 'Giant and Dwarf Theory' (stars condense, heat up, move across the H-R diagram from right to left as giants, then descend diagonally down the main sequence to end as red dwarfs and, eventually, dark stars, though a few are allowed to reheat and become white dwarfs. All the stars and indeed all cosmic objects are averred to be made of the same substances, though the only entity mentioned as being dominated by hydrogen is the solar corona.

No credits are given for the rather nice photographs and drawings, which are therefore probably the author's own. His Milky Way is roughly that of Shapley, a disc with the Solar System far from the centre, but the disc is made of star clusters (we live in the local one), and our Galactic core has been largely denuded in forming stars that now occupy the spiral arms. That is, his picture of galaxy evolution endorses the vocabulary of 'early' (elliptical) and 'late' (spiral) types, just as his picture of stellar evolution endorses 'early' and 'late' spectral types. The Milky Way indeed has a flock of globular clusters above and below its plane (so does the Andromeda nebula), though they are not concentrated toward the centre and do not extend as far out as the edge of the disc.

In a bit of healthy scepticism, Steavenson suggests that it may not be true that other galaxies are much smaller than the Milky Way (indeed, modernized distance scales have taken care of that, as well as of the time-scale problem). His Milky Way rotates, at about 200 miles per second where we are (yes, miles, also inches, light years, and so forth), yielding a mass of about 100 000 million suns.

According to the received wisdom of 2023, Dr. Steave is very sound on the nearby (indeed he mentions two asteroids that come closer than Eros, though they were found in 1932 and did not yet have orbits as he wrote) and remarkably both accepting and sceptical of 1933 views of "the boundless universe." The parts we want to rewrite come in the middle!

Perhaps also odd by our standards are the author's choices of which astronomers to mention by name — Copernicus, Kepler, Tycho, Newton, William Herschel, and Galileo (in that order) — and none of his immediate predecessors or contemporaries, or looming successors. This probably saved him from making enemies — as indeed reflected in his election to the presidency of both the BAA and the RAS.

In summary, a lovely 90-minute read with two bonus pieces of paper (you would be surprised at the prices for nightgowns in 1971!) and a mysterious former owner. — VIRGINIA TRIMBLE.

Here and There

ALSO THE INVENTOR OF A TIME MACHINE

October 7: Death of Thomas Frederick Furber. Born in England in 1955 he was an Australian government surveyor of New South Wales; observed the Transit of Venus in 1882 from Lord Howe Island; FRAS 1896. — *The Observatory*, **143**, 283, 2023. [For which the Editors are guilty.]