

# Observational cosmologist

Donald E. Osterbrock

**Edwin Hubble, the Discoverer of the Big Bang Universe.** By Alexander S. Sharov and Igor D. Novikov. *Cambridge University Press: 1993. Pp. 187. £19.95, \$34.95.*

EDWIN Hubble was one of the most important astronomers of all time. Copernicus and Galileo moved the centre of our Universe from the Earth to the Sun; Hubble moved it from somewhere in our Milky Way system to an arbitrary point in the vast, expanding universe of galaxies. He was born more than a century ago, and died in 1953. Yet, apart from memorial biographical articles written soon after his death, there were no biographies of him in print before this book.

*Edwin Hubble, the Discoverer of the Big Bang Universe*, written by two outstanding scientists of the former Soviet Union, originally appeared in Russian in 1989. Now, with only slight changes and additions, it has been published in an English translation. It is in many ways a good book. But a really satisfactory biography of Hubble remains to be written.

The authors are among the best representatives of Russian astronomy and astrophysics. Alexander S. Sharov is an outstanding observational research astronomer at the Sternberg Astronomical Institute. He has worked on our Galaxy and other, nearby galaxies, especially M 31 and M 33, which were the subjects of two of Hubble's most important early papers. Igor D. Novikov, now the director of the Theoretical Astrophysics Centre in Copenhagen, is a brilliant theoretical cosmologist.

The sections of the first part of the book, based on Hubble's published scientific papers, and on those of his predecessors who first saw dimly the redshift-apparent magnitude (or velocity-distance) relationship which was his revolutionary discovery, are very good. The authors found the published source material, understood it thoroughly and explain it very clearly. Similarly, the second part of the book, on the more recent observational and theoretical advances in the study of the Universe, is excellent. It is well written and informative. The main threads of the leading ideas in cosmology up to just a few years ago are very clearly explained. Fred Hoyle, Geoffrey Burbidge and Jayant Narlikar might complain

that the subtitle of the book, by describing Hubble as "the discoverer of the big bang", has pushed their ideas out of consideration, but it is hard to imagine a better treatment of mainline cosmology than the last 50 pages of this book.

Where the book fails, however, is in its treatment of its subject's life and of his human qualities. As the authors write in the preface, they could not do any research on the original sources for this side of Hubble's life. They had to depend on copies of some of the material in Hubble's personal papers in the Huntington Library in San Marino, which are themselves incomplete, on a tape-recorded interview with Allan Sandage, who worked with Hubble at the end of his life and knew him well, and on a letter from Hubble's younger sister, the late Helen Hubble Lane, who was 89 years old when she wrote it.

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**Hubble liked to embellish stories of his exploits.**

Hubble himself, like many Americans but perhaps more than most, liked to act out roles and tell embellished stories of his exploits outside the field of science. After his death, his widow, Grace, selected and improved on these tales in a manuscript 'diary' and record of his life, which is in the Huntington Library. Richard C. Tolman, Hubble's close friend and collaborator, wrote a short memorial biography soon after Hubble's death which perpetuated some of these myths. Nicholas U. Mayall, Hubble's protégé and Grace's friend, did the same at greater length 15 years later. They are part of the canon of Hubble's life on which Sharov and Novikov necessarily depended.

In 1989, three US scientists and historians, who had dug into many sources for letters, news items, newspaper and magazine articles, high-school, university and

vital records, and First World War records and divisional histories, published an article exploding many of the myths about Hubble. Sharov and Novikov saw this article soon after the Russian edition of their book had been published but, as they themselves state, were able to make only slight and unsatisfactory changes to the English edition. Hence Hubble's personal life is not adequately described or interpreted in this book.

Its authors, quite understandably, do not know much about other US astronomers of Hubble's time. Thus they confuse Fred Wright, the geophysicist and an expert on the Moon and optical glass, with William H. Wright, the Lick Observatory spectroscopist. And they believe that the Barnard Medal of Columbia University, which Hubble received in 1935, commemorates the astronomer Edward E.

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Barnard; actually it is named after Frederick A. P. Barnard, one-time president of the University of Mississippi and later of Columbia. Sharov and Novikov do not understand many of the nuances of American life, particularly the family pressure on Hubble to become a lawyer, and his own consuming but thwarted ambition to become the director of Palomar Observatory after the Second World War.

In the Russian edition, the names of Western scientists were naturally transliterated into Russian characters; for the English translation they were transliterated back using different protocol. Thus many well-known astronomers' names are misspelled or misstated. Similarly, several US cities are misplaced or have their names misspelled, and the National Academy of Sciences appears as the American Academy of Natural Sciences in one place in the book, but under its right name in another. The anonymous editor was clearly well schooled in English literature, for the quotations from Robert Louis Stevenson and Barbara Tuchman are correct, but astronomy was another matter.

*Edwin Hubble* is well worth reading for what it is: a scientific history based on Hubble's published research papers. But it is incomplete and even wrong as the story of his life, and of the thoughts and ideas behind those papers. Since 1989, more historical papers have treated other aspects of Hubble's career. His biography remains to be written. It will have to incorporate all these source materials, and probably others as well, still unknown or undiscovered. □

Donald E. Osterbrock is at the Lick Observatory, University of California, Santa Cruz, California 95064, USA.