BOOK REVIEW

THE FAMILY OF THE ASTRONOMERS WILLIAM AND CAROLINE HERSCHEL


reviewed by David W. Hughes*

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William Frederick Herschel (1738–1822) must be prominently placed in the top ten of anyone’s list of the world’s great astronomers, for two main reasons. First, about 200 years ago, he almost single-handedly transformed astronomy from the restricted study of our near neighbourhood—the Sun and its attendant family of planets—into a consideration of the much more distant stellar and nebular universe and essentially the cosmos as a whole. Second, he did this by building and using his own telescopes. Needless to say, these were not just any old telescopes. They were a succession of the most optically precise telescopes of the day. These instruments were much better than the prized instruments of the national observatories such as those at Greenwich and Paris. Herschel thus revealed that some stars that were seen as confused blobs in other instruments were actually double stars, many of which were orbiting their common centre of mass. He also transformed the contemporary view of the sky’s nebulous objects. At the time, many perceived them as mere hindrances to the more important task of discovering new comets. Herschel made them bodies worthy of a lifetime of study—places of possible star formation and even remote galaxies just like ours. And Herschel (because shop-bought telescopes were ‘beyond his purse’), cast the telescope mirrors, ground them and mounted the instruments, all in his kitchen workshop in Bath.

Coupled with his observational and instrumental achievements William Herschel also had a fascinating family life. Originally one of ten children, in a Hanover musical family, William ‘emigrated’ to England in search of a fortune, and eventually rescued his pock-marked, diminutive sister, Caroline, from her role as the family’s ‘Cinderella’ household drudge and helped her become a role model for today’s astronomical sisterhood. Astronomically he was an autodidact. He was also a scientific convert, having been seduced by the wonders of the heavens from his occupation as organist, choirmaster and composer. William also had an extremely lucky break. On 13 March 1781, when in his early forties, he serendipitously discovered the planet Uranus. This indirectly provided this naturally charming and hardworking man with the Copley Medal and a Fellowship of the Royal Society, and with a salaried job as the royal astronomer to King George III. These, together with his marrying a rich widow, enabled him to spend the remainder of his life away from the burden of his previous poverty.

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Michael Hoskin, the Cambridge academic, is the world authority on the Herschel family. In this delightful, erudite and informative book he returns to Isaac and Anna, William’s parents, and then charts, chapter by chapter, their lives and the lives of each of their ten children. Some chapters, those concerning Johann Heinrich, Anna Christina, Maria Dorothea and Frantz Johann, are pitifully short because these children died when very young. Others, discussing William, Caroline and Alexander, are more substantial. Hoskin cleverly makes each chapter a stand-alone essay on each family member. He also treats the reader to an insightful account of the state of astronomy at the time and the influence that the work of William and Caroline had on its advancement.

Hoskin wears his expertise lightly and has produced at one and the same time a most readable and enjoyable overview of the life and scientific accomplishments of this family as well as an extremely well referenced and useful introduction to the state of English astronomy at the turn of the nineteenth century.