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# Galileo

## Decisive Innovator

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MICHAEL SHARRATT



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*For Ted Sharratt*

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# *General Editor's Preface*

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Our society depends upon science, and yet to many of us what scientists do is a mystery. The sciences are not just collections of facts but are ordered by theory, and this is where Einstein's famous phrase about science being a free creation of the human mind comes in. Science is a fully human activity; the personalities of those who practise it are important in its progress and often interesting to us. Looking at the lives of scientists is a way of bringing science to life.

Galileo, the last man of science whom we customarily call by his first name, was the first scientific star: his work brought him European fame, and in his own day and since he stood out from even the ablest of his predecessors and contemporaries. If we had to name one founder of modern physical science, with its dependence upon mathematical reasoning in defiance of common sense, then most of us would pitch upon Galileo. He insisted that the same physics must apply to the Earth and the heavens; and he devised, and sometimes carried out, experimental tests of his reasoning. He did not invent the telescope but he perceived its importance, enabling us to see things (however blurred in the early models) never seen before, with momentous consequences for accepted beliefs about the world. Denounced to the Inquisition, he was, in his old age, condemned to house arrest after a show trial, which made him a kind of martyr to science and has assured his continuing fame.

He does not fit our picture of the physicist, doing his most brilliant work at the age of about twenty. He was no youthful prodigy, and was

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## GENERAL EDITOR'S PREFACE

propelled into the limelight only by his work on the telescope done in his forties. His fundamental challenge to the physics of Aristotle came later, and by the time he faced the Inquisition he was nearly seventy. His most important scientific treatise was written later; after the trial, he recovered his zest for science, and never lost his intellectual liveliness.

He was no austere and cloistered academic. He wrote brilliant invective, never suffering fools gladly. His self-confidence was enormous, and he tended to regard astronomy and mechanics as the territory on which he had staked out a claim, and on which trespassers risked being prosecuted. He was in a hurry; he knew that he was right about the Earth going round the Sun and the new inertial physics that made sense of this idea, and he refused to say that this Copernican theory was a mere calculating device. A milder man might have got the new ideas admitted gradually (probably not in his lifetime); but Galileo's temperament put him on collision courses. He was, in his own estimation at least, a good Catholic; and he felt urgently that the Church must not commit itself to obsolete science. Belatedly, his Church has now vindicated him.

Michael Sharratt succeeds in bringing Galileo to life. His researches on the science, the theology and the general history of the early seventeenth century make him an ideal biographer for this brilliant and pugnacious man, who saw further than most contemporaries. He transports us into the controversies in which Galileo was engaged, on serious issues that are still with us in various forms, and also illuminates Galileo's Venice, Florence and Rome. It is an excellent book.

*David Knight*  
*University of Durham*

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*Michael Sharratt*  
*Ushaw College*