



CHAPTER 1

ORIGIN OF THE COSMOS
AND THE SOLAR SYSTEM

And God said, 'Let there be light', and there was light.

GENESIS

Cosmologists are often wrong, but never in doubt.

LEV LANDAU, RUSSIAN PHYSICIST (NOBEL PRIZE, 1962)

OF ALL THE QUESTIONS about the world over which human beings have pondered since they first became capable of rational thought, none are more fundamental than – where do we come from? How did the world come to be the way it is? How did the physical universe which we see displayed around us on any clear night, with its countless billions of stars and galaxies extending to unthinkably remote distances, come into being? How, on one otherwise unremarkable star, did a planet form with equable temperatures, ample liquid water and an atmosphere of benign gases? How, on that planet, did there emerge life forms and ecosystems that in the extraordinary variety of their nature, and the complexity of their interactions, make the merely physical universe seem a thing of comparative simplicity?

Science makes the bold and amazing claim that it can largely answer these questions. It does not claim to explain why there should be a universe