

CONTENTS

PREFACE	ix
I PHYSICS AND COSMOLOGY TODAY	
1 The Nature of Matter	3
2 The Standard Model	19
3 The Big Bang	37
4 The Inflationary Universe	55
II THE FRONTIERS OF SCIENCE	
5 Beyond the Standard Model	73
6 The Invisible Universe	93
7 The Farthest Things in the Universe	115
III BEYOND THE FRONTIERS: THE BOUNDARIES OF SCIENCE	
8 Superstrings: Twenty-First-Century Physics or Medieval Theology?	145
9 Where Did the Universe Come From? Why Hasn't It Curled Up into a Ball?	167
IV THE FRINGES AND THE EDGES OF SCIENCE	
10 On the Edge	197
11 Physics and Metaphysics	209
Glossary	225
Selected Bibliography	239
Index	241