PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY A MATHEMATICAL, PHYSICAL & ENGINEERING SCIENCES

Preface to Highlight in Quantum Optics

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Phil. Trans. R. Soc. Lond. A 1997 **355**, 2217
doi: 10.1098/rsta.1997.0119

Preface

The manipulation of atoms by coherent laser radiation, control of quantum dynamics using specially engineered environments, and the study of fundamental quantum properties of light formed the subjects of a Royal Society Discussion Meeting on Highlights in Quantum Optics, which took place on 29 and 30 January 1997. The aim of the meeting was to bring together experimentalists and theorists in this field to give a balanced view of current thinking and to examine future prospects in this exciting field of research. Laser cooling of atoms formed a central part of this meeting, and it is with great pleasure that we recently heard that two of our speakers, Claude Cohen-Tannoudji and Steve Chu (together with Bill Phillips) were awarded this year's Nobel Prize in Physics for their work in this area. The recently discovered Bose–Einstein condensation of matter formed from laser-cooled atoms, the manipulation of single photons and single atoms, and the application of these fundamental ideas in quantum information processing, quantum communications and quantum cryptography were also reviewed.

The organizers thank the staff of the Royal Society for their help in preparing for this meeting and in producing this published proceedings.

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Printed in Great Britain

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