THE PRESSURE OF LIGHT

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649451623

The Pressure of Light by J. H. Poynting

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

J. H. POYNTING

THE PRESSURE OF LIGHT

Trieste

THE PRESSURE OF LIGHT

THE ROMANCE OF SCIENCE

THE PRESSURE OF LIGHT

BY

J. H. POYNTING, Sc.D., F.R.S.

MASON PROFESSOR OF PHYSICS AT THE UNIVERSITY OF BIRMINGHAM

17314

PUBLISHED UNDER THE DIRECTION OF THE GENERAL LITERATURE COMMITTEE

LICK OBSERVATORY
UNIVERSITY
OCT 15 1935
CALIFORNIA
MT. HAMILTON

LONDON
SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE
NORTHUMBERLAND AVENUE, W.C.; 43, QUEEN VICTORIA STREET, E.C.
BRIGHTON: 129, NORTH STREET
NEW YORK: E. S. GORHAM
1910

RICHARD CLAY & SONS, LIMITED,
BREAD STREET HILL, E.C., AND
BUNGAY, SUFFOLK.

QC
467
P7

PREFACE

IN the course of the last few years the author has lectured on the Pressure of Light in many places. Some of the lectures have already been published in full or in abstract. In this book the substance of these lectures is set forth more completely and in greater detail than was possible in any one lecture.

For readers who desire to study the mathematical calculations involved in the theory of the subject, a series of notes is appended.

July 1910.

CONTENTS

PRESSURE OF LIGHT

I

HOW LIGHT EXERTS PRESSURE

WHEN we see the havoc wrought on a sea-wall by a storm, it is easy to believe that ocean waves exert a pressure against the shore on which they beat. But it is not easy to think that the tiny ripples of light also press against every body on which they fall, to think that when a lamp is lighted waves of pressure are sent out from it—pressing against the source from which they start, pressing against every surface which they illuminate. Yet we now know certainly that light does exercise such pressure. It is a very minute pressure, far too small, even when it is strongest, to be felt by our bodies, and only to be detected by exceedingly sensitive apparatus.

In the following pages I shall try to give some account of the reasoning by which the existence of light-pressure was predicted, and shall then describe the experiments by which it was, many years later, actually detected and measured. I shall then point out some consequences of the