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978-1-107-04390-9 - Polarimetry of Stars and Planetary Systems

Ludmilla Kolokolova, James Hough, Anny-Chantal and Levasseur-Regourd

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Polarimetry of Stars and Planetary Systems

Summarizing the striking advances of the last two decades, this reliable introduction to modern astronomical polarimetry provides a comprehensive review of state-of-the-art techniques, models, and research methods.

Focusing on optical and near-infrared wavelengths, each detailed, up-to-date chapter addresses a different facet of recent innovations, including new instrumentation, techniques, and theories; new methods based on laboratory studies, enabling the modeling of polarimetric characteristics for a wide variety of astronomical objects; emerging fields of polarimetric exploration, including protoplanetary and debris disks, icy satellites, transneptunian objects, exoplanets, and the search for extraterrestrial life; and unique results produced by space telescopes and polarimeters aboard exploratory spacecraft. With contributions from an international team of accomplished researchers, this is an ideal resource for astronomers and researchers working in astrophysics, earth sciences, and remote sensing who are keen to learn more about this valuable diagnostic tool. The book is dedicated to the memory of renowned polarimetrist Tom Gehrels.

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CAMBRIDGE UNIVERSITY PRESS

University Printing House, Cambridge CB2 8BS, United Kingdom

Cambridge University Press is part of the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of education, learning and research at the highest international levels of excellence.

www.cambridge.org

Information on this title: www.cambridge.org/9781107043909

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First published 2015

Printed in the United Kingdom by TJ International Ltd. Padstow Cornwall

A catalogue record for this publication is available from the British Library

Library of Congress Cataloguing in Publication data

Kolokolova, Ludmilla, 1951–

Polarimetry of stars and planetary systems / Ludmilla Kolokolova,
University of Maryland, James Hough, University of Hertfordshire,
Anny-Chantal Levasseur-Regourd, Université Pierre & Marie Curie.
pages cm

Includes bibliographical references and index.

ISBN 978-1-107-04390-9 (hbk.)

1. Polarimetry. 2. Astrophysics. 3. Planetary Science. I. Kolokolova, Ludmilla.
II. Hough, James. III. Levasseur-Regourd, Anny-Chantal. IV. Title.

QB465.K65 2015

522'.65–dc23

2014045890

ISBN 978-1-107-04390-9 Hardback

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Cambridge University Press

978-1-107-04390-9 - Polarimetry of Stars and Planetary Systems

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