

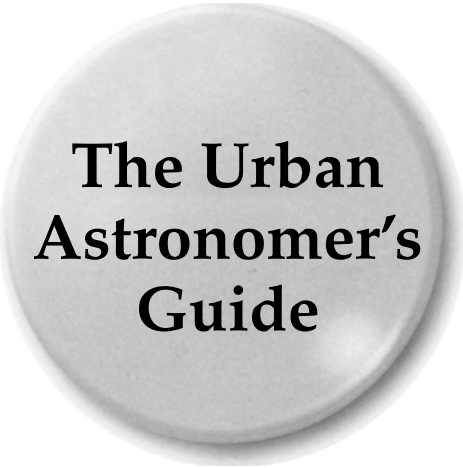


# Patrick Moore's Practical Astronomy Series

---

## Other Titles in this Series

- Telescopes and Techniques (2nd Edn.)  
*Chris Kitchin*
- The Art and Science of CCD Astronomy  
*David Ratledge (Ed.)*
- The Observer's Years (Second Edition)  
*Patrick Moore*
- Seeing Stars  
*Chris Kitchin and Robert W. Forrest*
- Photo-guide to the Constellations  
*Chris Kitchin*
- The Sun in Eclipse  
*Michael Maunder and Patrick Moore*
- Software and Data for Practical Astronomers  
*David Ratledge*
- Amateur Telescope Making  
*Stephen F. Tonkin (Ed.)*
- Observing Meteors, Comets, Supernovae and other Transient Phenomena  
*Neil Bone*
- Astronomical Equipment for Amateurs  
*Martin Mobberley*
- Transit: When Planets Cross the Sun  
*Michael Maunder and Patrick Moore*
- Practical Astrophotography  
*Jeffrey R. Charles*
- Observing the Moon  
*Peter T. Wlasuk*
- Deep-Sky Observing  
*Steven R. Coe*
- AstroFAQs  
*Stephen Tonkin*
- The Deep-Sky Observer's Year  
*Grant Privett and Paul Parsons*
- Field Guide to the Deep Sky Objects  
*Mike Inglis*
- Choosing and Using a Schmidt-Cassegrain Telescope  
*Rod Mollise*
- Astronomy with Small Telescopes  
*Stephen F. Tonkin (Ed.)*
- Solar Observing Techniques  
*Chris Kitchin*
- Observing the Planets  
*Peter T. Wlasuk*
- Light Pollution  
*Bob Mizon*
- Using the Meade ETX  
*Mike Weasner*
- Practical Amateur Spectroscopy  
*Stephen F. Tonkin (Ed.)*
- More Small Astronomical Observatories  
*Patrick Moore (Ed.)*
- Observer's Guide to Stellar Evolution  
*Mike Inglis*
- How to Observe the Sun Safely  
*Lee Macdonald*
- The Practical Astronomer's Deep-Sky Companion  
*Jess K. Gilmour*
- Observing Comets  
*Nick James and Gerald North*
- Observing Variable Stars  
*Gerry A. Good*
- Visual Astronomy in the Suburbs  
*Antony Cooke*
- Astronomy of the Milky Way: The Observer's Guide to the Northern and Southern Milky Way (2 volumes)  
*Mike Inglis*
- The NexStar User's Guide  
*Michael W. Swanson*
- Observing Binary and Double Stars  
*Bob Argyle (Ed.)*
- Navigating the Night Sky  
*Guilherme de Almeida*
- The New Amateur Astronomer  
*Martin Mobberley*
- Care of Astronomical Telescopes and Accessories  
*M. Barlow Pepin*
- Astronomy with a Home Computer  
*Neale Monks*
- Visual Astronomy Under Dark Skies  
*Antony Cooke*



**The Urban  
Astronomer's  
Guide**

*A Walking Tour of the Cosmos  
for City Sky Watchers*

Rod Mollise

 Springer

Rod Mollise  
Mobile, AL, USA

British Library Cataloguing in Publication Data  
A catalogue record for this book is available from the British Library

Library of Congress Control Number: 2005932858

Patrick Moore's Practical Astronomy Series ISSN 1617-7185  
eISBN: 1-84628-217-9  
ISBN-10: 1-84628-216-0  
ISBN-13: 978-1-84628-216-4

Printed on acid-free paper  
© Springer-Verlag London Limited 2006

Apart from any fair dealing for the purposes of research or private study, or criticism or review, as permitted under the Copyright, Designs and Patents Act 1988, this publication may only be reproduced, stored or transmitted, in any form or by any means, with the prior permission in writing of the publishers, or in the case of reprographic reproduction in accordance with the terms of licences issued by the Copyright Licensing Agency. Enquiries concerning reproduction outside those terms should be sent to the publishers.

The use of registered names, trademarks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant laws and regulations and therefore free for general use.

The publisher makes no representation, express or implied, with regard to the accuracy of the information contained in this book and cannot accept any legal responsibility or liability for any errors or omissions that may be made.

Printed in Singapore/KYO

9 8 7 6 5 4 3 2 1

Springer Science+Business Media  
springer.com

# Contents

Introduction .....	vii
--------------------	-----

## Part I: Telescopes and Techniques

1 The Whys and Hows of Urban Observing .....	3
2 Telescopes for Urban Observers .....	13
3 Accessories for Urban Observers .....	37
4 Urban Observing Techniques and Projects .....	53
5 Urban Observing Programs .....	69

## Part II: A Walking Tour of the Cosmos

6 <b>Spring</b> .....	93
Tour 1 Burning Heart of the Hunting Dogs, M94, M51, and Company .....	93
Tour 2 Lion's Den .....	104
Tour 3 The Tresses of Berenice .....	113
Tour 4 In the Arms of the Maiden .....	124
7 <b>Summer</b> .....	135
Tour 1 The Friendly Stars .....	135
Tour 2 Arkenstone in the Stars .....	145
Tour 3 Star Nests in Cygnus .....	153
Tour 4 Requiem for the Dead Stars .....	161
8 <b>Autumn</b> .....	169
Tour 1 A Trio of Fall Globulars .....	169
Tour 2 Titan and Crab .....	177
Tour 3 The Cassiopeia Clusters .....	187
Tour 4 Deep Water Constellations .....	195
9 <b>Winter</b> .....	201
Tour 1 M78: Return of the Hunter .....	201

Tour 2 Challenges for Deep Winter Nights . . . . . 210  
Tour 3 A Surprise Planetary . . . . . 216  
Tour 4 Winter’s Eskimo . . . . . 223  
Tour 5 One for the Road . . . . . 230

Appendix 1: Internet Resources . . . . . 237

Appendix 2: Finding Directions in the Sky . . . . . 239

Appendix 3: Object Classifications and Descriptions . . . . . 241

Appendix 4: The Urban Astronomer’s Guide: Complete List of Objects . . . . . 245

Index . . . . . 251

# Introduction

*The Urban Astronomer's Guide* is the result of a crazy idea for a book that came to me nearly twenty years ago. I knew deep sky objects—nebulae, star clusters, and galaxies—could be seen from the city. Plenty of amateur astronomers were braving countless streetlights in search of distant marvels. But there was little written information available on viewing the deep sky from urban and heavily light-polluted suburban locations. The only mention of the subject I found in astronomy books and magazines was the stern warning that it was impossible to get a good look at anything other than the Moon and planets from urban locales. I knew this wasn't true—I'd observed the entire Messier list from my bright backyard and had a lot of fun doing it. I was sure many more amateur astronomers “trapped” amid city lights would also love to see deep sky wonders from home—if only they had a little information and encouragement. Solution? The book you hold in your hands.

I spent many, many hours observing the objects that form the sky tours included in this guide. But that was the enjoyable part of the project. The hard work was done by my friend and fellow observer, Pat Rochford, and by my dear wife, Dorothy. They didn't share much of the observing fun; instead they devoted themselves to the tasks of checking the manuscript, and, most importantly, providing the encouragement I needed to keep going with what some people told me was an “impossible” concept for a book. Thanks are also due—in spades—to John Watson. Just when I was ready to toss this idea aside, he, like Pat and Dorothy, kept me on track. Dorothy, Pat, and John—this one is for you.

Rod Mollise  
Selma Street  
Summer, 2005