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Imaging the Southern Sky

An Amateur Astronomer's Guide

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Foreword by Sir Patrick Moore

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Foreword

It is often said that the southern skies are richer and more interesting than those of the north. Yet there are not many books devoted mainly to them, and Stephen Chadwick and Ian Cooper's is a welcome edition. I am sure you will find it useful and enjoyable.

Sir Patrick Moore

Preface

The idea for this book arose after reading Ruben Kier's excellent book in this series, *The 100 Best Astrophotography Targets*. While there is no doubt that each of the targets included in the book are superb, one of the criteria used in their selection was the ability to image them successfully from northern latitudes, which meant that each one required a declination of at least −25°. Unfortunately, this mean that only a limited number of objects in the book were accessible to astroimagers living further south.

A gap therefore existed for a work that focused on the best targets for astroimaging situationed outside of the area covered by Kier, and so this book came about. For the sake of simplicity, we decided to only include objects in the southern sky, i.e., south of the celestial equator. This doesn't mean, however, that this book is relevant only to those living in the southern hemisphere, but rather that the number of accessible objects increases the further south you are situated. Those living in the southern United States, for example, may find it possible to image down to Dec −35° on a good night and therefore will be able to target a large number of the objects we discuss. On the other hand, those living further south – say 20° south of the geographical equator – will be able to access all of the objects included here.

Aside from their location south of the celestial equator, various other factors have influenced the inclusion of each object in this book. Firstly, our chosen objects range from those that are familiar to both observers and amateur astroimagers, to lesser known (and hence rarely imaged) targets that, in some cases, we stumbled across by accident. Secondly, the chosen objects encapsulate the full range of targets available to amateur astroimagers including emission nebulae, dark nebulae, reflection nebulae, galaxies, planetary and bipolar nebulae, supernova remnants as well as wide-field images of large areas of the night sky. Thirdly, the objects have been selected to ensure that there are a variety of accessible targets for each individual astroimager regardless of experience, budget, available gear, and environmental conditions. It is simply a case of choosing objects that suit your particular set-up.

If you are relatively new to astroimaging, it might be worth reading the chapters in Part Two first as this will help you to decide which of the objects are suitable for your set-up and environmental conditions. It is particularly important to ascertain what field size is provided by your scope/camera combination, an issue which is discussed in Chapter 11. The field size of each image, along with other possible alternatives, is provided in the imaging information for each, so having ascertained your field size, you then simply choose a suitable target and start imaging.

In many cases, descriptive names have been provided for the objects in this book, making it easier to identify what you and others have imaged. Many of these names have been in use for centuries; John Herschel, for example, named the Keyhole Nebula in the nineteenth century due to the similarity of its visual appearance to a recognized object. As professional astronomy developed throughout the twentieth century, more descriptive names became common, such as the Pillars of Creation named by the Hubble Space Telescope photographers. With the rapid development in amateur digital astroimaging over the past 20 years, the best images available of some objects have actually been taken by amateurs from their own backyards, and amateur observers have also been responsible for coining the names of many astronomical objects. Thus we have collected together the descriptive names that are in use by observers and imagers (both professionals and amateurs alike). In a few cases, where no name seems to be in use, we have taken the liberty of suggesting our own name. Descriptive names have usually arisen from the way the image appears when orientated "north-up," and this is the way most of the images are presented here, aside from a few instances where the dimensions of the book have made this impossible. On these occasions it is a good idea to turn the image so that north is up in order to get a proper feel for the object.

Each image is accompanied by a technical section that states how the particular image was taken. This is not to imply that this is the only or even the best way to image the object successfully. Due to the time constraints involved in the production of this book, many of the images – particularly emission nebulae – were taken using narrowband filters, which enable imaging in moonlight. It may be the case that equally good results can be achieved using traditional color imaging.

In summary, this book provides a substantial overview of many of the great objects of negative declination available to the amateur astroimager. It is, however, only the starting point. There are parts of the southern sky, such as the Magellanic Clouds, that have only been touched upon here. Years could be spent imaging the objects in these satellite galaxies alone. It is therefore hoped that this book will provide inspiration for astroimagers to really get stuck into imaging the huge variety of jewels of the southern sky that have not been included here.

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writing. Stephen's energy levels and willingness to tackle some of the obscure fields proposed meant that we were able to go where few but the professionals have gone before.

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