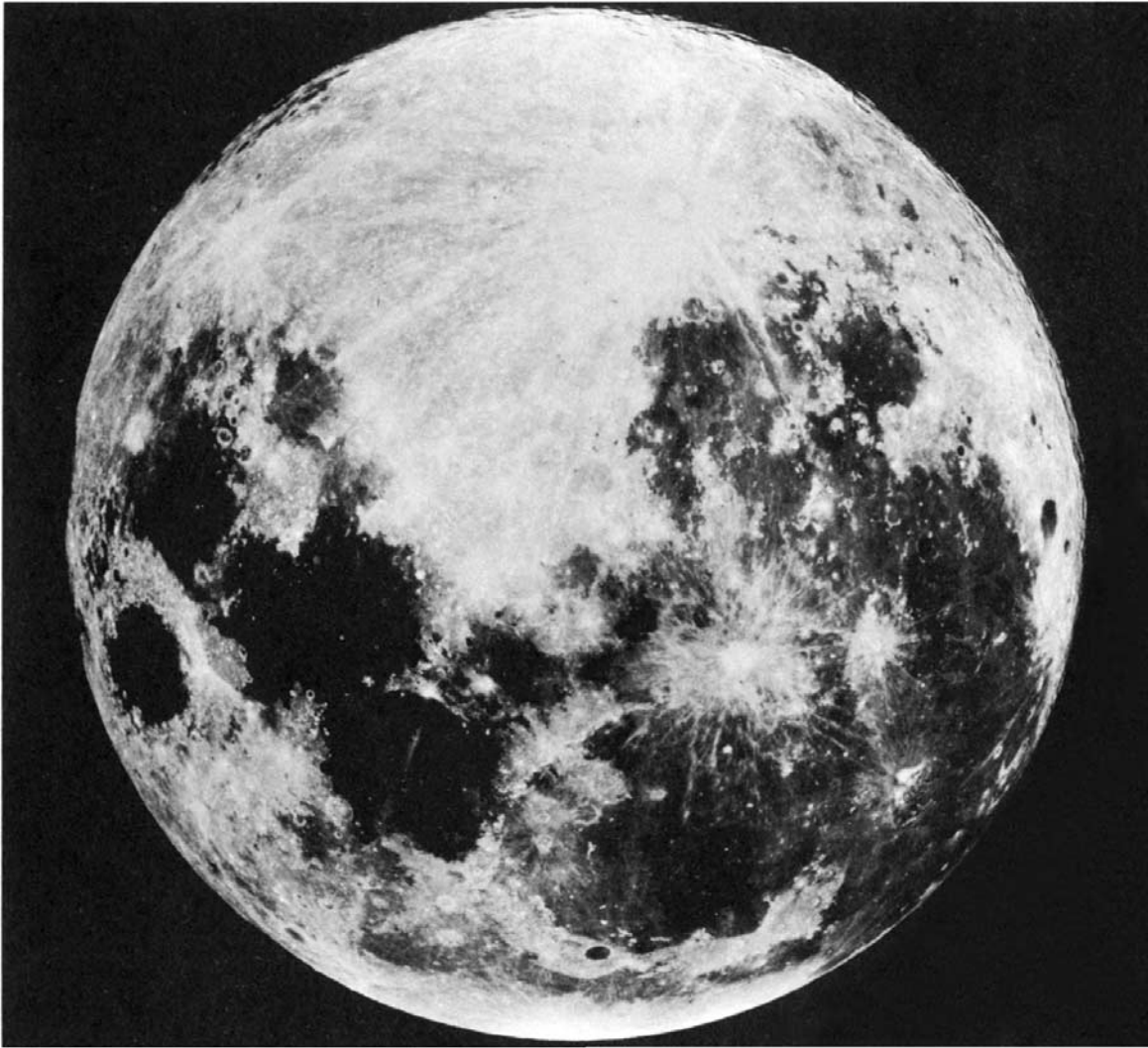


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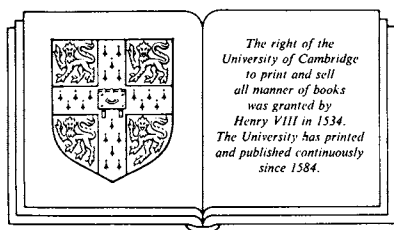


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The Moon observer's handbook

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*To my mother
Corona Alexandra Price
and to the memory of my father
William George Price*

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- 12 Mare Humorum, Gassendi, Letronne and Doppelmayer
- 13 Aristarchus, Herodotus and Schröter's Valley, with Prinz and the Harbinger Mountains

FOREWORD

For a while amateur astronomers seemed to have lost interest in the Moon, following its exploration by space probes and astronauts, most likely because of an erroneous impression that we 'knew all there was to be known' about Earth's only natural satellite. This seems no longer to be the case, for various amateur groups are carrying out interesting and vigorous observing programs.

Dr Price, a most careful and self-critical observer, has drawn on his many years of lunar observation to produce a detailed guidebook to lunar observing, which fills an important gap and is a welcome addition to the literature. Anyone who wants to learn how to observe the Moon will surely profit from this work.

Ernst E. Both
Director and Curator of Astronomy,
Buffalo Museum of Science New York USA

PREFACE

This book has been written to help amateur observers of the Moon to observe effectively, to record their observations accurately and, where possible, to make contributions of scientific value. Several books have been written on observational astronomy containing chapters on lunar observation and the British Astronomical Association has produced its own *Guide* for the lunar observer. Many books are devoted to the detailed topography of the Moon, such as *The Moon* by H.P. Wilkins and P.A. Moore (Faber and Faber, 1955). However, there does not seem to be a comprehensive book-length manual devoted solely to lunar observation. The present work is an attempt to fill this gap.

Ever since the publication of the close-up photographs of the lunar surface obtained with the lunar probe and Orbiter space craft cameras and the preparation of accurate photographic lunar atlases, there has been a feeling in amateur astronomical circles that there is not much point in carrying on with Earth-based telescopic study of the Moon: it would seem hardly likely that data of scientific value are likely to result. However, I do not agree with this point of view for reasons detailed in the Introduction.

Lunar observation with Earth-based telescopes of the type found in amateur hands is by no means pointless or obsolete and this book is addressed to amateurs who study the Moon for their own pleasure as well as to observers who wish to contribute to knowledge of the Moon.

The Introduction suggests some answers to the question 'Why observe the Moon?' and the newcomer to lunar observation may thereby be helped to understand and clarify his own motivations and to decide whether he really wants to specialise in this area as well as demonstrating that Earth-based lunar observation is a worthwhile scientific pursuit. Following this, Chapter 1 gives the beginner a grasp of the relation of the Moon to the Earth, and the Moon's surface features, and the following chapter provides necessary 'background knowledge' of the Moon's motions in relation to the Earth and Sun. Chapter 3 describes the principle instrument of observation—

Preface

the optical telescope—and initiates the amateur into the essential elementary theory of the telescope so that he can use the instrument intelligently after deciding what sort of telescope to acquire. Chapter 4 is a guide to the main features of the Moon's surface as they successively come into view on consecutive evenings from new Moon to just after full Moon. Observational technique, getting to know one's way around the Moon and the best times of the day, month and year to observe are fundamental to serious lunar observation and these topics are dealt with in Chapter 5. At this point the amateur who wishes to do no more than to observe and record what he sees will probably be satisfied.

The last two chapters will interest serious amateurs who want to move on from the aesthetic satisfaction of lunar observation to more advanced scientific investigations. The chapter on 'Mysterious Happenings on the Moon' and the references elsewhere in the book to anomalous happenings and phenoma on the Moon are deliberately inserted because they are controversial and because a sense of mystery is one of the most powerful stimuli to investigation. Whatever light can be thrown on some of these lunar 'mysteries' by the skilled amateur will be a real contribution to knowledge. With this in mind the last chapter offers suggestions for serious research. Finally, the Appendices contain data likely to be useful to the practical lunar observer.

I have not compiled a comprehensive map of the Moon to illustrate this book because there are so many good ones in existence and I saw no point in duplicating what is already easily available. A list of Moon maps will be found in the Appendices. The usual small scale map of the Moon shows all types of formations and some of these maps are quite overcrowded with the names of surface features so that the effect is often to confuse the beginner. Instead of a single map, I have included a number of simple outline maps, each one devoted to one kind of lunar feature, e.g., craters are shown in one map, mountain ranges in another and so on. By so doing I hope to have overcome the crowded and confusing effect of one comprehensive map and have enabled the reader to immediately and easily appreciate the location and distribution of each kind of lunar feature shown on each of the maps.

If, in writing this book, I have convinced the amateur lunar observer that Earth-based observation of the Moon is worthwhile and have helped him to derive the maximum of aesthetic pleasure from his hobby, as well as pointing the way to making contributions to knowledge, then I will be well satisfied as I will have achieved my main objective.

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Dr Jean Dragesco of the Association of Lunar and Planetary Observers generously supplied several of his beautiful photographs of lunar surface features for illustrative material. The Lick Observatory authorities kindly allowed me to reproduce their photographs of the full Moon (frontispiece) and the last quarter Moon.

My thanks are due to various publishing houses for permission to redraw illustrations from their books for use as illustrative material in the text. These are:

W.W. Norton & Co. (*New Guide to the Moon*, P.A. Moore, 1976) for Figs. 1.12 and 6.14

Frederick Muller (*Our Moon*, by H.P. Wilkins, 1954) for Figs. 4.12 and 6.2

Hutchinson & Co. (*Surface of the Moon*, V. A. Firsoff, 1961) for Fig. 4.11

The Council of the British Astronomical Association allowed me to redraw illustrations from various issues of *The Moon* (BAA Lunar Section Journal) and the *Journal* of the BAA for Figs. 4.21, 4.25, 6.4, 6.10 and 6.13.

Finally, my thanks are due to my friend, Joseph Provato, for typing most of the manuscript.

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