Lunar Views:
Lost on the Moon

Hopefully you have had a chance to get outside and take a look at the moon through a telescope or binoculars, or at least seen some detailed pictures of the moon in a book or on the Internet. If so, then you already know that the moon is indeed a feature-rich object to observe. It is quite easy to get lost on the moon, especially when observing under high magnification at a small part of the whole. In this edition, I'll discuss a few of the aids I find useful to help keep me from getting lost. I have not done an exhaustive search of all that is available, but I have identified a few resources that I feel are worth owning and that I use regularly.

To begin with, if you already have a general purpose book on astronomy, it most likely has a chapter dedicated to the moon and includes a few charts. It probably highlights the mare and some of the more prominent craters, but lacks detail beyond that. This is a great way to start getting familiar with the moon. After you are comfortable finding your way around the moon with this resource, you might be ready to move on to tools more dedicated to just the moon.

I know some folks prefer hardcopy like a book or chart, and some folks prefer software, so I'll cover both here. Just like a woodworking shop, I like to have a variety of tools available and work with whatever tool best fits the need of the moment. I like a big chart of the full moon when I want to think about the big picture. I prefer a book of charts when I want to identify small details while sitting behind the telescope. When planning lunar photographs, I prefer software that informs me about the libration of the moon and the location of the terminator (remember, the terminator is that jagged line across the face of the moon where light and dark meet), or allows me to search and find an object when I know its name but not its location.

For a whole-moon chart, I use Sky and Telescope's "Field Map of the Moon". This is a very nice fold-out chart that contains a surprising amount of detail with over 1000 labeled features. When folded up, it is 12 by 12 inches, when unfolded it is 24 by 24 inches in size. It is laminated to survive the damp environment found behind a telescope. It is modestly priced at $10.95. It can be purchased from the Sky and Telescope website (www.SkyAndTelescope.com) and possibly other sources. This chart was drawn by the well-known lunar cartographer Antonin Rukl. It includes the libration zones around the edges. It is available in two versions, one is a normal projection like you would see naked-eye or through binoculars, the other is a mirror-image projection to make it look like what is seen through some telescopes. Since I use a variety of ways to look at the moon, I prefer the normal projection version. If I am looking through a telescope that presents a mirror-image view, I just have to reverse the chart image mentally.

For a more detailed map of the moon, I use the "Atlas of the Moon". This book is also published by Sky and Telescope and available on their website, but can also be purchase for less at other outlets such as Amazon.com. This book was a classic of lunar mapping for many years but went out of print. The demand for this book resurged and used copies were fetching very high prices. About a year ago, Sky and Telescope made the wise decision to re-publish this book, so once again it can be purchased for a reasonable price. S&T has it for $44.95, Amazon sells it for $29.67. The new edition includes some updating as well. This beautiful 224-page book is also the handiwork of Antonin Rukl. The first part contains some nice diagrams and text that explain topics such as libration, phases of the moon, etc. The bulk of the book is the detailed charts that Mr. Rukl must have spent a great deal of time creating.

If a computerized tool is your preference, I recommend the "Virtual Moon Atlas", VMA for short. To begin with, you just can't beat the price, it is absolutely free to download! Although the authors of this amazing piece of software are French, Christian Legrand and Patrick Chevalley have released it in several languages including English, French, Spanish, Italian, Portuguese, and Russian. For the English version, start at http://www.astrosurf.com/avl/UK_index.html. After you navigate to the download

page, you will have to choose whether you want the Light, Basic, Expert, or Pro versions. The Pro version is an astounding 362 Mbyte download, but the other versions are much smaller than this at 6 to 14 Mbytes. If you have only dial-up access, you might want to find a friend with high-speed Internet access and save it to a CD. The Basic version will work just fine for most lunar observing, but if you want to become a real lunar scholar, get the Pro version. Pro includes many overlays showing a vast amount of scientific data.

There is a lot of functionality with VMA, I won't try to rewrite the documentation for it here. When you first open VMA, it will present a view of the full face of the moon and a shadowed area to represent that portion that is currently in darkness. At the top of the window is a zoom slider that will let you get a closer look at an area, and pan controls are to the right and below the image to allow you to move around on the moon's face. If you place your cursor over a feature and click, information on that feature will be displayed under the "Information" tab on the right. If you click on the "Terminator" tab, a list of the objects that currently lie on the lunar terminator is displayed. Now, what if you want to see what the moon will look like two nights from now. Click on the "Ephemeris" tab, type in the date and time of interest, then click the "Compute" button to see the moon's appearance at that moment. Under the "Configuration" menu, you can set many things including the display of the moons phase, the location of the libration point, the texture used to render the image, and much more. The "Help" menu brings up a wealth of information on how to use VMA. This software never ceases to amaze me with its capabilities. It is hard to believe that the authors provide such a powerful, well-written tool absolutely free.

Using the tools discussed above, or ones that you have found that meets your needs is an important part of building a deeper understand and appreciation of the moon.

You are welcome to contact me by email at doug@ShoestringAstronomy.com, and view some of the astronomical fun I have at www.ShoestringAstronomy.com