ASTRONOMICAL SOCIETY OF KANSAS CITY

OUR NEAREST NEIGHBOR, XII

By Walt Robinson

For the lunar enthusiast, there are many types of software available to make your journey exploring your nearest neighbor more enjoyable. Although many of the planetarium-type programs have some information about the moon, for a more robust guide, there some excellent software packages to choose from that are easy on the pocketbook.

Gary Nuggent has authored "Lunar Phase Pro." The program consists of three different versions — Lite, Regular and Pro. The Lite version of the software offers the following features: Moon/Sun-rise and -set times, times of morning and evening twilight, current moon phase, times and dates of the major moon phases for the current month, a built-in calendar that lets you see data for different dates and times, a daily diagram that shows where the Moon/Sun will be in the sky for the selected date, Equinox and Solstice information as well as the length of the seasons for the selected year. It gives the date of Easter Sunday for the selected year, provides in-depth data on a selected day and links to online resources on the Moon. The Regular version enhances on Lite by providing additional tools to include graphically displaying the current phase of the moon (in real time), its age, percentage illumi-nated, distance, position, apogee and perigee, circumstances of lunar eclipses and the times and dates of the major lunar phases for the selected month and year. The Pro version goes one step further by using integrated observation planning tools and the general lunar data presented on screen. The Pro version also contains an interactive Moon Atlas and over 9,200 features in its database. Maps can be zoomed, panned over and printed out and they emulate the view through your telescope. The Pro version is probably the most extensive package I have seen on the market. All three versions run on Win98/ME/NT/2000/XP. For the pro package, I would suggest at least a 500mhz machine to run it, since it is somewhat processor intensive. The three packages sell for $15, $25 and $43 respectively. More information about the software and it's various features can be found on Gary Nuggent's internet site located at http://lunarphasepro.nightskyobserver.com/

Five years ago Christian Legrand and Patrick Chevalley produced what is known as the "Virtual Moon Atlas." First off — for those that do not want to lay out cash for soft-ware — this package is *free*. It also comes in three versions: Light, Basic and Expert. For those looking for a complete
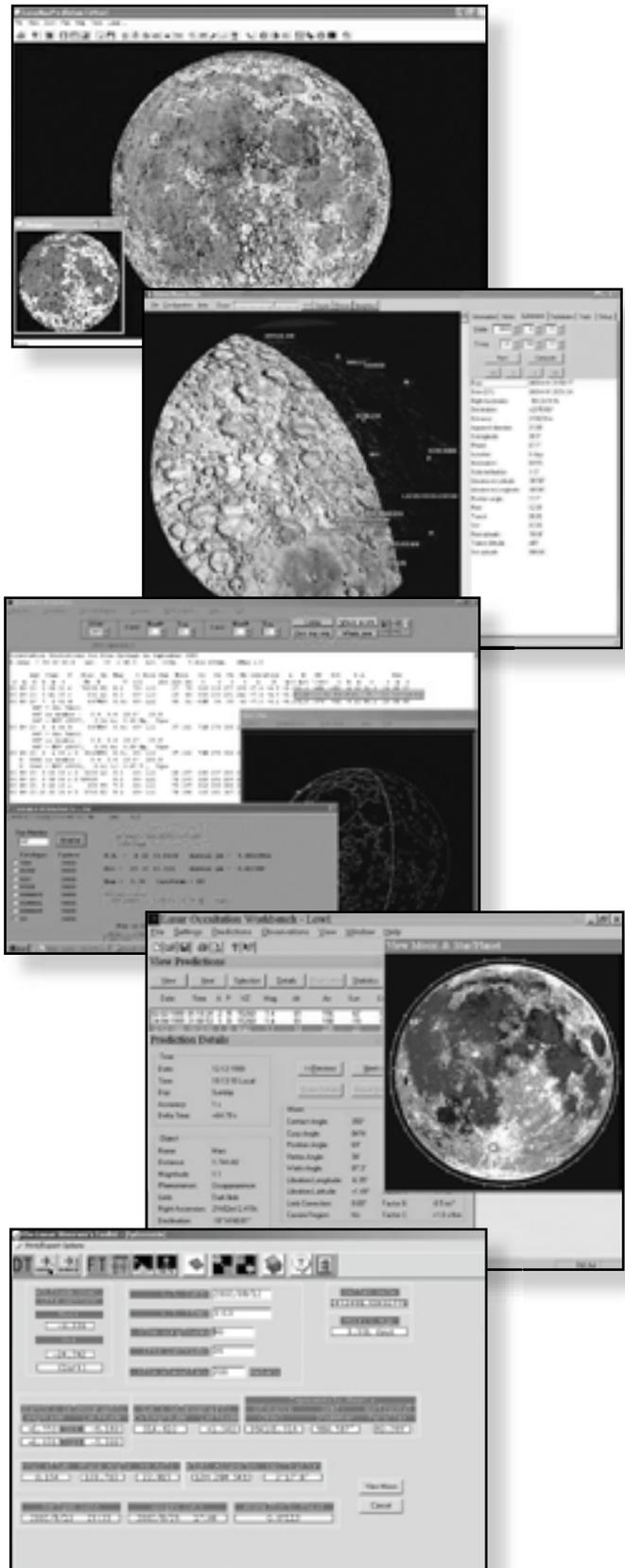
Lunar-observing software can be aquired for varying amounts of investment from free to $90. Top to bottom, examples of packages mentioned in this article are: "Lunar Map Pro," "Virtual Moon Atlas," "Occult," "Lunar Occulation Workbench" and "Lunar Tool Kit."

lunar atlas package, this is the one to get. The software will run on Windows 95/98/Me/NT/2000/XP, and has been reported to work on other platforms such as Macintosh with VirtualPC and Linux with WinE.

The Light version is not only a trimmed down version of the software, but it is great for older computers with minimal hardware configurations. The Basic software presents the moon in either 2D or 3D, depending on the version. The software also can be embellished with numerous add-on packages of lunar pictures from the *Consolidated Lunar Atlas*, *Lunar Orbiter Photographic Atlas*, Apollo Missions, Ranger (8 and 9), Surveyor (1, 3, 5, 6 and 7), Lunar Orbiter (1, 2, 3 and 5), Luna (9, 13, 17 and 21) and Clementine. The "Expert" version allows linking computerize telescopes to the software for a true virtual excursion of the lunar surface and in helping to find particular lunar features. The software package also offers detailed information about the surface features, a phase calendar, an historical database on all spacecraft that have gone to the moon and much more. The software can be downloaded for free from http://www.astrosurf.com/avl/UK_index.html

Another lunar atlas package similar to the "Virtual Lunar Atlas," is "Lunar Map Pro 4." The software uses an ultra-high resolution texture map which can be viewed in any orientation, a basic ephemeris, a surveying tool, advanced search capabilities and much more. The downside is that this software retails for $90. Also, before version 4, for copyright protection, you have to have the CD in the CD drive for the software to work. Version 4 eliminates that. One thing this software does offer is the ability to view lunar features in 3D (terrain modeling) by using the NASA radar elevation data with the software developers' advanced GIS engine. Animation is also possible by making movie clips of lunation cycles, libration, rotations, flyovers etc. More on this software package and it's many unique features can be found at http://www.riti.com/prodserv_lunarmappro.htm

For those interested in occultations and grazes by the Moon or other solar system objects, David Herald has authored "Occult" software. It is freeware. It will run on Windows 95/98/Me/NT/2000/XP. It also is not processor-intensive, so can be run on older computers and laptops. It can either be downloaded from the Web site, or purchased on CD for the cost of materials (currently $5).More on this package can be found at http://www.lunar-occultations.com/iota/occult3.htm

Another occultation package is offered by the Dutch Occultation Association. It is used primarily by the European community and is called "Lunar Occultation Workbench" (LOW). It has the same precision and reliability as "Occult," but does not compute asteroid occultations. Whereas "Occult" comes in one standard version, LOW software comes in either a Lite or Professional version depending on the stellar database used. LOW is a hefty 32-bit program requiring at least a Pentium 100 MHz PC running Windows 95, 98 or NT and at least 16mb of RAM. More on this package can be found at http://home.plex.nl/~gottm/doa/

For those interested in Lunar Dome research — those small, blister-like swellings found on the lunar surface (see http://luna.uai.it/domi/lunar_domes_uai_lunar_section.htm) — Harry Jameson of the Association of Lunar and Planetary Observers has produced "Lunar Toolkit." This software is specifically aimed at locating, cataloging and recording observations of lunar domes, but has some other nice features such as an extensive ephemeris generator, a module for calculating dates and times for similar lighting conditions over a lunar feature, a library of technical papers and articles relating to lunar domes and an interface to acquire images from online resources of particular lunar features. The software sells for $50 and can be ordered by e-mailing Harry at h.jamieson@bresnan.net. More on this software package can be found at http://home.bresnan.net/~h.jamieson/

Thus ends this series of articles on the Moon. I hope over the past year you have gained a new appreciation of the "night light," learned some new things and had some fun along the way. So what is next? Maybe some articles on lunar observing techniques? That remains to be seen. I do know that I will be out with the telescope at every opportunity to observe the Moon. After all, it is our Nearest Neighbor!

Walt Robinson has been a member of the Astronomical Society of Kansas City since 1987. His present duties include Webmaster for the society's Web site. He has presented many programs at the public nights at Powell Observatory and in Bonner Springs, Kan. where he lives.

Walt also runs the "Robinson Lunar Observatory" to spur interest in the moon among amateur astronomers. His recent "lunar light ray" program brought many amateurs together from across the United States and abroad to study and observe these events. An article written in the Astronomical League's Reflector *explained the program, and as a result recruited many more interested amateurs into studying the moon.*