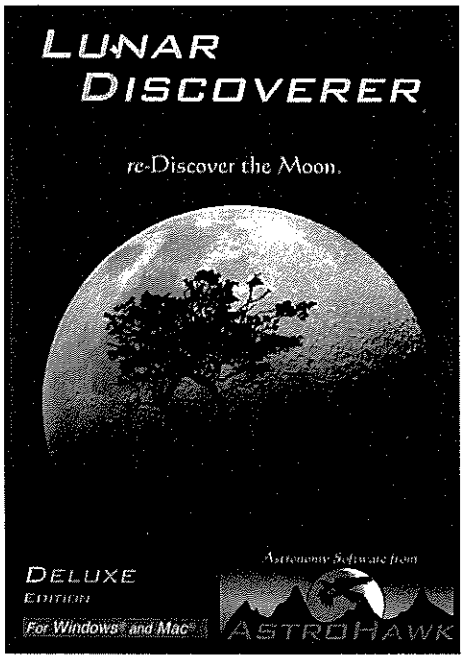
Paul Deans

Lunar Discoverer

Mac and PC users alike can use this program to aid their telescopic explorations of the Moon



Lunar Discoverer

US price: $59.95 for the Deluxe Edition (the Standard Edition, with smaller databases and fewer program features, costs $44.95)

AstroHawk Corp.
P.O. Box 646
Chiefland, FL 32644
astrohawk.com

"Hello, I'm a Mac."
"And I'm a PC."

Most readers probably recognize these opening lines from a long-running series of television ads for Apple computers. Well, I'm a Mac and happily so — most of the time. The rare occasions I have PC envy occur when I see the vast array of Windows-based software versus the minuscule number of titles in the Apple line. In particular, there's a dearth of Mac-based astronomy software.

So imagine my delight when I found AstroHawk's *Lunar Discoverer.* The Deluxe Edition contains an extensive database of lunar features (including physical details and images), several types of lunar maps, an audio-format pronunciation guide, and numerous options for customizing the program for your observing sessions. Best of all, the software lets you create a custom, interactive map of the Moon for any date and time between 1904 and 2040 — on a Mac! (I hasten to add that it works identically on a PC.) Another nice feature is that you can generate views that match the field and orientation of the Moon as it appears in your telescope.

WHAT WE LIKE:

Runs on a Mac as well as a PC

Easy to customize

WHAT WE DON'T LIKE:

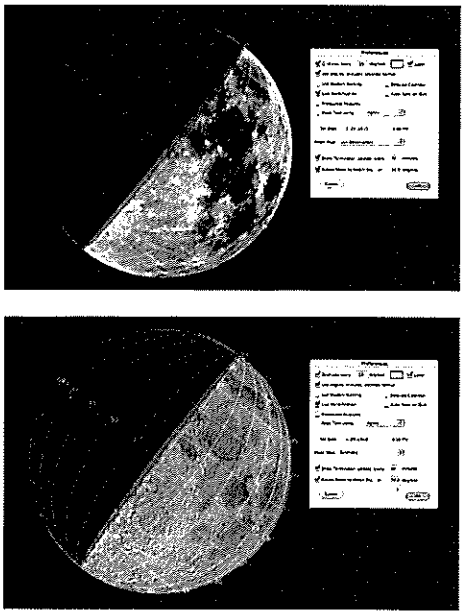
Handles time poorly

Doesn't include the effects of libration

I was particularly interested in seeing how accurately *Lunar Discoverer's* map and its display of the terminator marking the division between lunar day and night compared with the real thing in the sky. There are two basic ways to use *Lunar Discoverer's* Moon map. One is to show the Moon as it looks in real time, which is useful for identifying lunar surface features that appear in your telescope's eyepiece. The other is to plan future observing sessions so you can catch features of interest when they're optimally placed for observation near the terminator. I used the Deluxe Edition, which has more options and a larger database of named lunar features (4,600+ vs. 1,300+) than the Standard Edition. Both come with a detailed PDF manual that covers the program's operation on both computer platforms.

I tried the program on numerous nights covering most of the lunar phases, and the software performed admirably when it came to identifying features seen through my telescope. Click on a crater and its name pops up. Double-clicking brings up more information, including physical details, information about who it's named after, a page reference to Antonín Rükl's *Atlas of the Moon,* and a close-up photo (if available).

Using the lunar map to plot future observing sessions



Lunar Discoverer can generate charts based on several views of the Moon, including actual photographs (*top*) and a "synthetic" surface that emphasizes relief features (*bottom*).

also worked well, but with a caveat. The software didn't do a good job of handling the effects of libration. This subtle "rocking" motion of the Moon varies the lunar face presented to observers and is especially critical when viewing features near the Moon's limb. Since the charts don't show libration effects, I had no expectation that the program would tell me the best dates to peek over the Moon's edge — and it doesn't.

But I was disappointed to find that the libration issue also affects the displayed location of the terminator, when it is more than 45° away from the midpoint of the lunar disk. At times it was off by as much as two or three hours from its actual appearance. For observers, this usually isn't a big deal when the Moon is waxing, since any feature in darkness will soon experience sunrise. But it can be a problem when observing features in a waning phase if sunset has already occurred for a feature that the program indicates is still on the sunlit side of the terminator.

One of the program's nice touches is the thin, light-gray band separating the terminator (indicated as a red line) and the black of the lunar night. The band indicates a region where mountain peaks and crater rims may catch rays of sunlight, even though the surrounding moonscape lies in darkness.

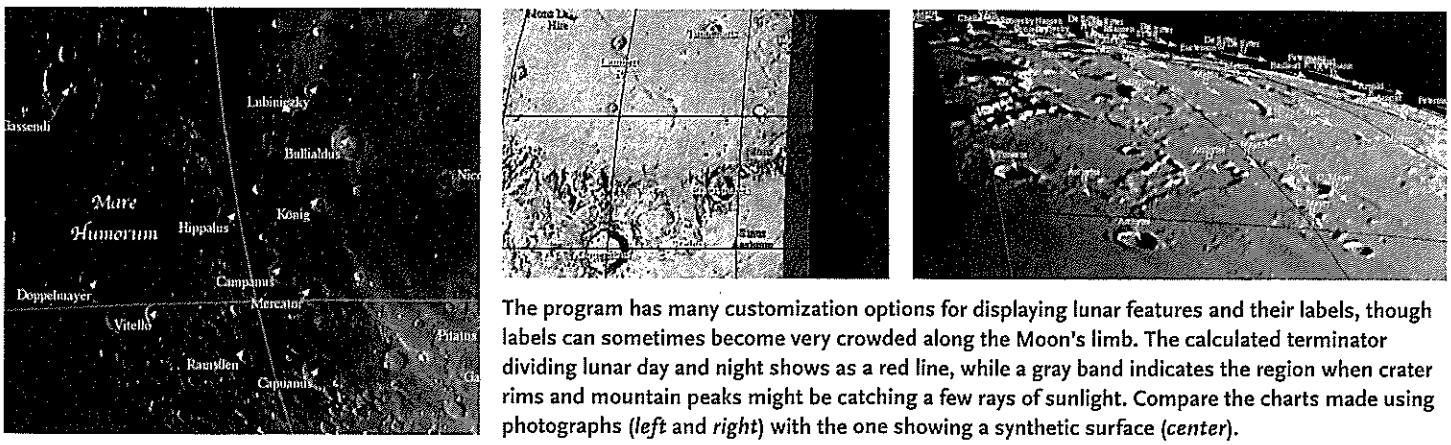
But beyond the libration problem, the software contains several vexing issues. In particular, time is not handled well. Local time (as read from your computer's internal clock) is mostly used, though you have to manually adjust the program to account for daylight time. But Universal Time crops up here and there and is incorrectly formatted as a 12-hour clock.

Even worse, when I entered a date/time in the Preferences window, the resulting chart would sometimes show the lunar phase for exactly 24 hours later. I confirmed by direct observation that the chart is correct for the date and time shown, but is for one day later than I requested. The problem is related to how the software handles local time and UT. It seems to add the user-defined GMT offset (in my case, 7 hours for Mountain Time) to the requested local time entered in Preferences. If that causes the time to advance past midnight, a chart is created for the correct time but for the following day. With my 7-hour offset, this "day-advance" happens at 5 p.m., so if I want a chart for a date and time in the future, I have to double check the chart's date if my requested time is 5 p.m. or later. It's an odd problem, but I'm surprised it hasn't been noticed and corrected.

Other problems lurk. For example, the lunar eclipse listing is peppered with incorrect details about the eclipse type; totality times are sometimes given for eclipses that aren't total; the standard/daylight time issues mentioned above also crop up here; and there's no indication of where on Earth a particular eclipse is visible. Click on a New Moon in the Calendar window and numerous, supposedly visible features around the lunar limb are listed and shown on the chart. And you can't cancel an accidental command to quit.

I tested Version 1.25 of *Lunar Discoverer* and it seemed to be a work in progress. One feature I'd really like to see added is the ability to adjust the time in hourly increments without having to call up the Preferences menu. As this review was readied for publication, AstroHawk released an update (V1.31), which doesn't correct the issues I've raised above (at least not in the Mac version). Despite its flaws, the program's mapping functions are good enough that I'll definitely make this program the one I use for lunar observing. ✦

Paul Deans is a freelance astronomy writer who has recently rediscovered the joy of chasing shadows along the lunar terminator.



The program has many customization options for displaying lunar features and their labels, though labels can sometimes become very crowded along the Moon's limb. The calculated terminator dividing lunar day and night shows as a red line, while a gray band indicates the region when crater rims and mountain peaks might be catching a few rays of sunlight. Compare the charts made using photographs (*left* and *right*) with the one showing a synthetic surface (*center*).