## Classroom Image Processing

To teach the importance of electronic imaging to his introductory astronomy laboratory class, physics professor Christopher Graney created **JCC-CCD,** a "student-proof" utility that provides basic image-processing capabilities. Graney wanted to stress the numerical nature of CCD images and address many student misconceptions about false color and image enhancement. His program offers basic functions, such as color palettes, simple filters, and brightness and zoom controls. And since it has no disk-writing capability, students can't save over original files. Graney provides the *Visual Basic* source code and encourages instructors who want to introduce students to CCDs to improve the program. >> Contact Christopher M. Graney, Jefferson Community College Southwest, 1000 Community College Dr., Louisville, KY 40272; christopher.graney@kctcs.net; www.jcc.uky.edu/faculty/graney/jcc-ccd/.

PC requirements: 486 processor, **Windows 95/98/NT,** 8 megabytes RAM, 1 megabyte hard-disk space, and 8-bit (256-color) display.
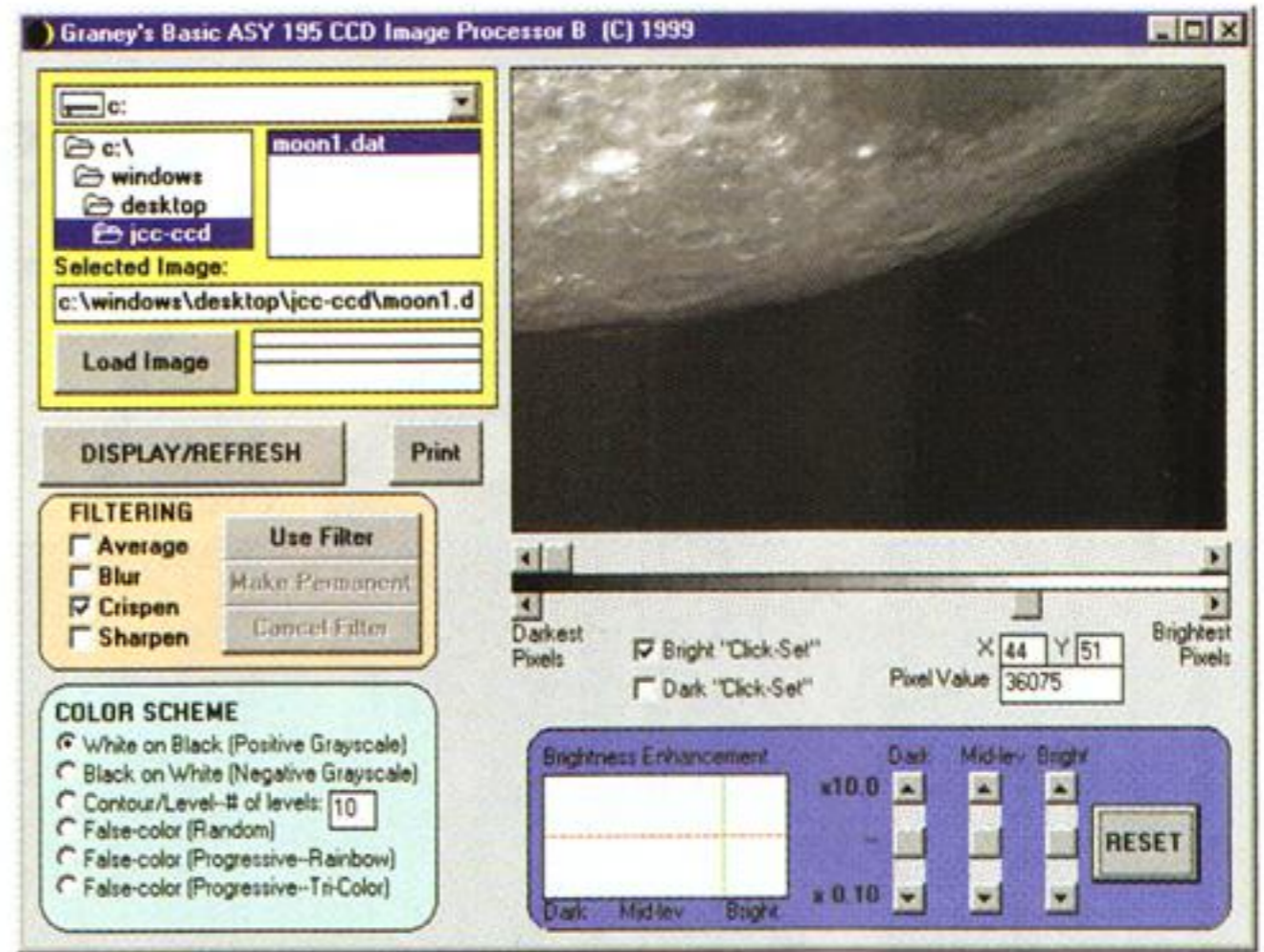
It's Full of Stars

Stars, planets, and more are at your command with François Nguyen's freeware **AlphaCentaure 1.1.** The charts that his software provides can include planets, comets, and asteroids with a range of labeling options and animation control. Besides the basic catalog of stars down to 8th magnitude, 600 asteroids, and 108 comets, the author's Web site has extra databases of fainter stars, deep-sky objects, and thousands of asteroids. Other functions include displaying the date in 20 calendrical systems, calculating the fields of view of eyepieces, and showing relative positions of the planets as an orrery. The software will also search for objects visible at specified times and list a year's worth of solar and lunar eclipses. The standard package is in French, but a separate module provides menus and information in English (with some lingering French words). >> Contact François Nguyen, alphacentaurii@hotmail.com; www.astrosurf.org/pluton/alphacentaure/.

PC requirements: Pentium processor, **Windows 95/98/NT,** 64 megabytes RAM, 120 megabytes hard-disk space, 8-bit display, and sound card.
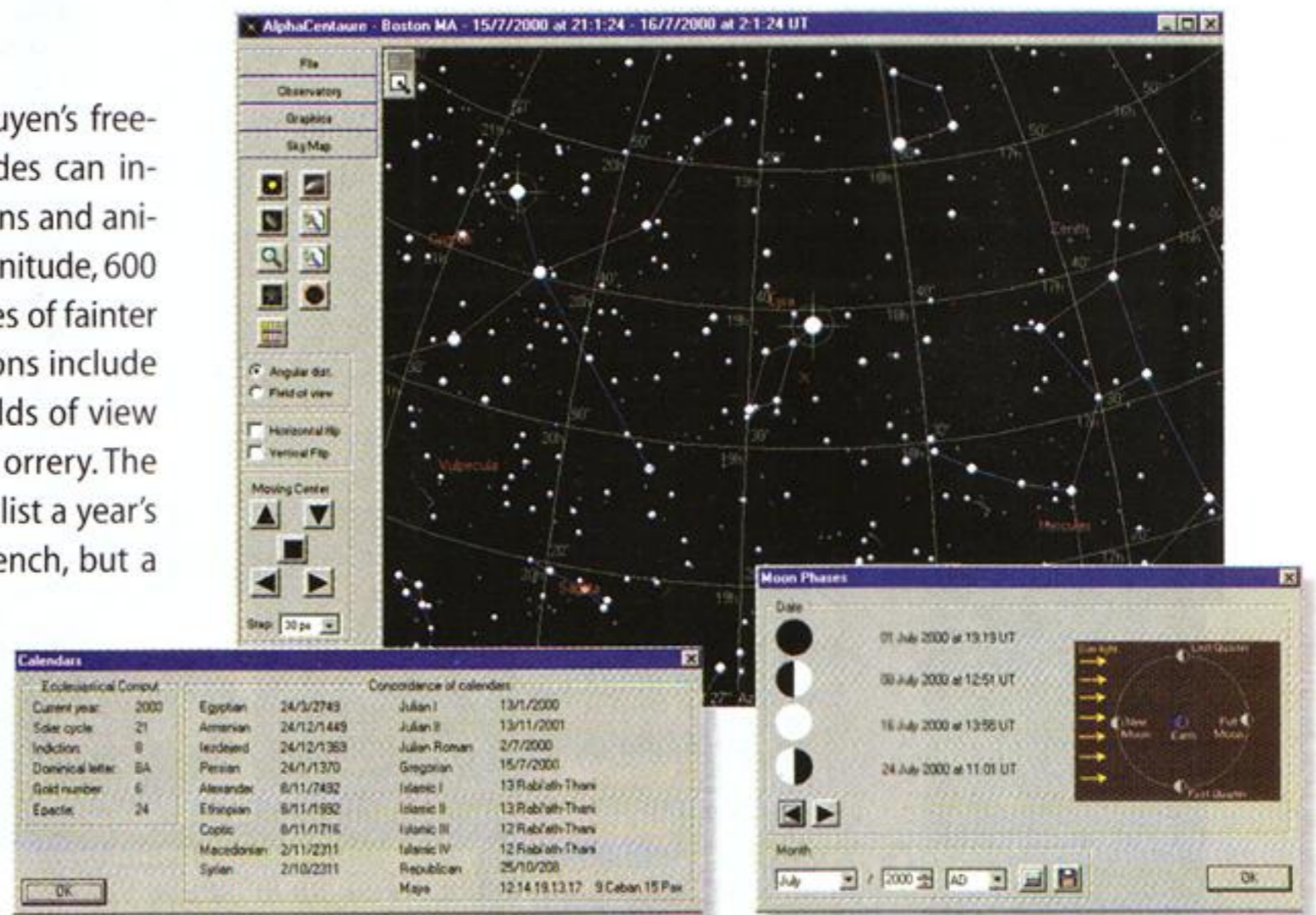
The Length of Days

Robert Urshel's impressive online homage to the analemma — the figure-8 pattern the Sun makes in the sky throughout the year — was featured in the June 1999 issue of *Sky & Telescope* (page 84). A recent addition to his site is **SunGraph,** a free utility for Windows and MacOS that he created to help explain the common question why latest and earliest sunrises and sunsets don't occur at the solstices (when the Sun is northernmost and southernmost in the sky). This handy utility displays a full year of solar visibility for any location on Earth and includes sunrise and sunset times for specific days, times of equinoxes and solstices, and dates of latest and earliest sunrises and sunsets. >> Contact Robert Urshel, info@analemma.com; www.analemma.com.

PC requirements: 486 processor, **Windows 95/98/NT,** 8 megabytes RAM, 1 megabyte hard-disk space, and 8-bit display.

MacOS requirements: 68040 or PowerPC processor, **System 7,** 8 megabytes RAM, 1 megabyte hard-disk space, and 8-bit display.
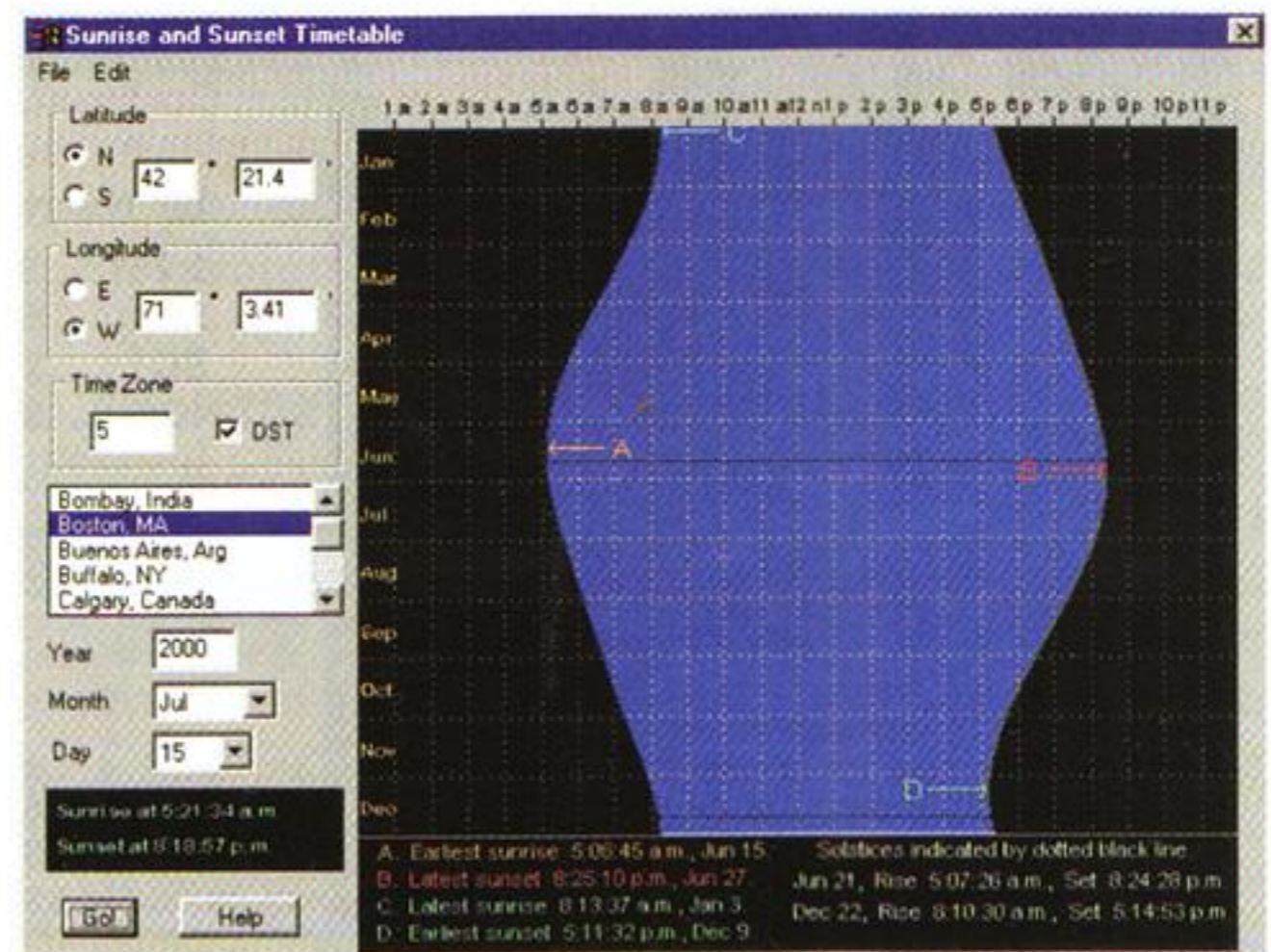
SOFTWARE SHOWCASE is a reader service featuring new and updated software products of interest to amateur astronomers. The descriptions are based largely on information supplied by the manufacturers or distributors. Sky & Telescope assumes no responsibility for the accuracy of vendors' statements. For further information contact the manufacturer or distributor. Product announcements should be sent to Stuart Goldman.