Deep Sky Planner Software Gets Better with Age

Review by Robert Reeves

Do you have limited sky access because of trees or buildings and need to know exactly when an object is visible? Do you have a light-bucket Dob capable of showing more objects than are displayed on most printed star charts and are unsure of what to look for? Or do you have a GOTO telescope with thousands of deep sky objects in its navigation computer, but you are a novice and are not familiar with which objects are big or bright enough to view from your light-polluted back yard? If you said yes to any of these situations, then Deep Sky Planner can help you plan your next observing session by creating comprehensive lists of deep sky, stellar, and planetary targets and darkness reports for you location , date, and time. Deep sky Planner can be configured to work with typical observing restrictions like those above, or it can be used to optimize the best observing times for objects visible in an open sky from anywhere on the planet.

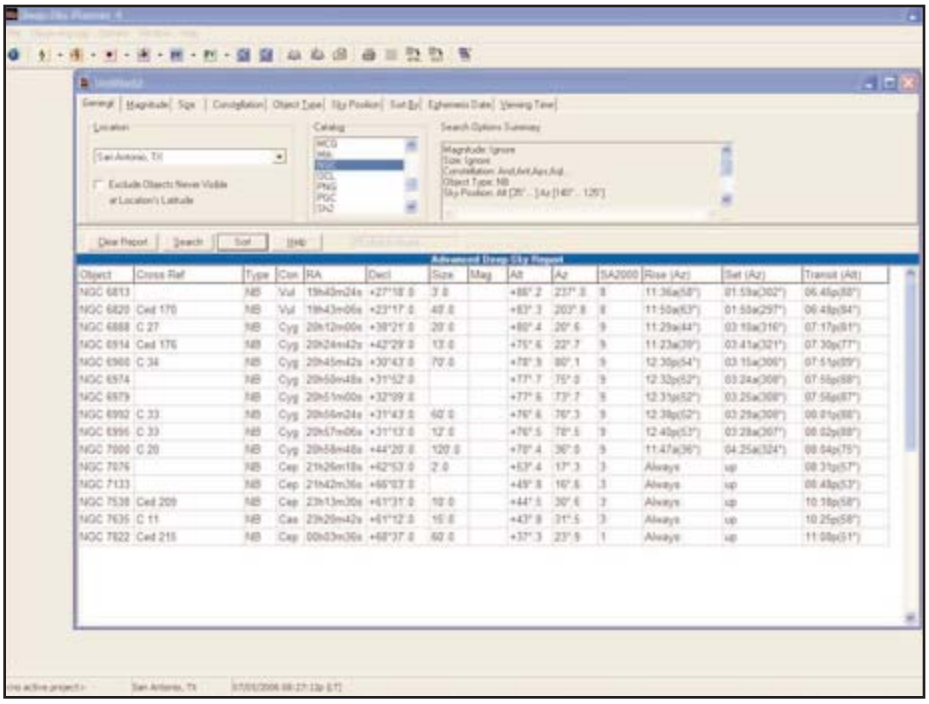

Fig 1 - With a click of the mouse, Deep Sky Planner 4 can sort deep sky objects by type, magnitude, constellation, best viewing time, or any number of other parameters.

Many years ago I reviewed an earlier version of Deep Sky Planner in this magazine. At the time I was impressed that the program could take the place of many single function shareware astronomy utilities that littered my computer's "astro" folder. Now in its 14th year, Deep Sky Planner has evolved into Version 4.1 and continues to expand as the software author Phyllis Lang incorporates more catalogs and features requested by users. Currently, Deep Sky Planner operates with a database of 155,000 deep sky objects drawn from 23 different catalogs, and recognizes 1500 common names for celestial objects. There are 94,000 cross references between catalogs and popular star atlases such as Sky Atlas 2000, Uranometria 2000 (first and second editions) , the Millennium Star Atlas, and the Herald-Bobroff AstroAtlas are supported in program's output. Deep Sky Planner also contains 142,900 carbon, variable, and double stars that are distinguished by spectral type and angular separation. There are also 2700 cross references between star catalogs and 45 common star names are recognized.

Deep Sky Planner also offers observation and astrophotographic logging tools that make the software a valuable observing accessory even if the observing planning features are not used. Visual observations can be logged with the program automatically calculating the image field of view and magnification using previously entered parameters for the telescopic and optical equipment used by the observer. Astrophotographic data logging utilizes a similar format, allowing the automatic calculation of field of view and image scale for the instruments used. Deep Sky Planner displays a thumbnail of the astrophoto associated with the technical information being logged. Images or observations can be imported from another file and observations can be searched by any parameter such as object name, observer, date, equipment used, observing locations, etc. Observation search results can be exported as either

text or HTML to allow easier Internet posting. An export utility allows observations to be shared or stored elsewhere other than within Deep Sky Planner. Search reports generated by Deep Sky Planner can be configured to show if a particular object has been observed before.

Having a lot of data to work with is no big trick for software designers these days as dozens of star catalogs are available online. Thus, the important questions about a piece of astronomical software is how easy is the interface to use, how useful and readable is the program's output, and how accurate are the program's calculations. Version 4 of Deep Sky Planner is not just a simple upgrade to the program, but is instead a complete rewrite of the source code to utilize newer software technologies and allow easy future growth of the program. Deep Sky Planner thus uses the familiar Windows interface following the Microsoft logo guidelines. The software allows the use of a powerful database program for astronomical searches without having to know how to operate a database program. Possitional data is calculated using the time honored and well-proven astronomical algorithms created by Jean Meeus. The positional accuracy calculated by the program is thus dependent upon the data accuracy of the object catalogs used within the program. All output positions are recessed to Epoch 2000.

Phyllis Lang, an experienced deep sky observer and mirror maker from Raleigh, North Carolina, originally created Deep Sky Planner to serve the observing needs of her and her astronomer husband, Mark. Here, in Phyllis' own words, is how Deep Sky Planner was born and evolved: "My husband and I went to TSP in 1989. It wasn't planned - we were touring around Arizona when we realized that TSP was a day's drive away and might be fun to visit. While there, we met Tom and Jeannie Clark. Tom had a 25-inch at the Prude Ranch and I got aperture fever. By October, Mark and I were in Sarasota picking up a 20-inch Tectron Dobsonian. It didn't take long to realize that searching magazines for objects to view was kind of tedious, so I started out with a little DOS program that searched the RNGC. Around 1990, NGC2000 came out on diskette and the inexpensive Turbo C++ compiler was released. Those led to better data and a more sophisticated program. Things got more serious when I left work in 1991 to have my first child and wanted a way keep my programming skills up. Sky Publishing was interested in publishing it and so we had a product. After my software contracting work was outsourced overseas in 2002, Deep-Sky Planner became a full-time job."

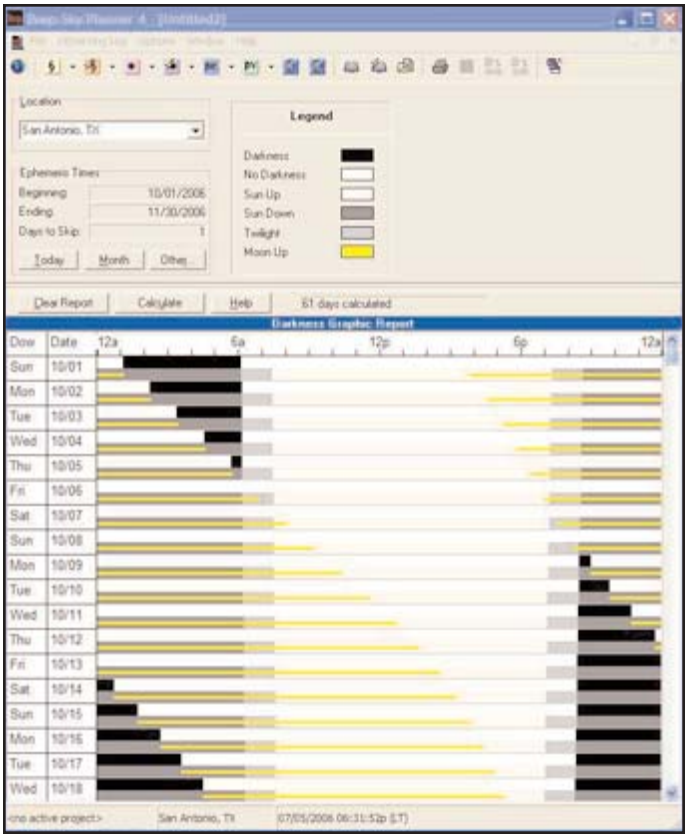

Fig 2 - Deep Sky Planner 4 can display a dark sky graphic configured to show daylight, twilight, dark times, and the lack of true dark due to the Moon for any period of time ranging from one day to weeks or months.

The software license for Deep Sky Planner must be activated within 30 days or the program becomes inactive. Online activation is fast and easy. Once Deep Sky Planner has been activated and registered, all subsequent upgrades within a particular version (currently version 4) are free and available online from www.knightware.biz. The user will need to know the Deep Sky Planner key number to download upgrade software.

Built-in program help is available from the standard Windows drop-down help menu or for each of the program's menus, dialog boxes, or search documents by pressing F1. For those who learn better through a live demonstration, the Deep Sky Planner website at www.knightware.biz has animated demonstrations of the steps needed to perform searches for deep sky objects, planetary targets, variable, and double stars.

Multiple searches can be performed by opening multiple documents, each with its own window Reports generated by Deep Sky Planner can be configured to exclude data that is not useful to the observer. For instance, if you do not own the Millennium Star Atlas or the Herald-Bobroff AstroAtlas, references to these publications can be deleted from the program's output. Utilizing the Optimize output feature allows individual data columns to automatically

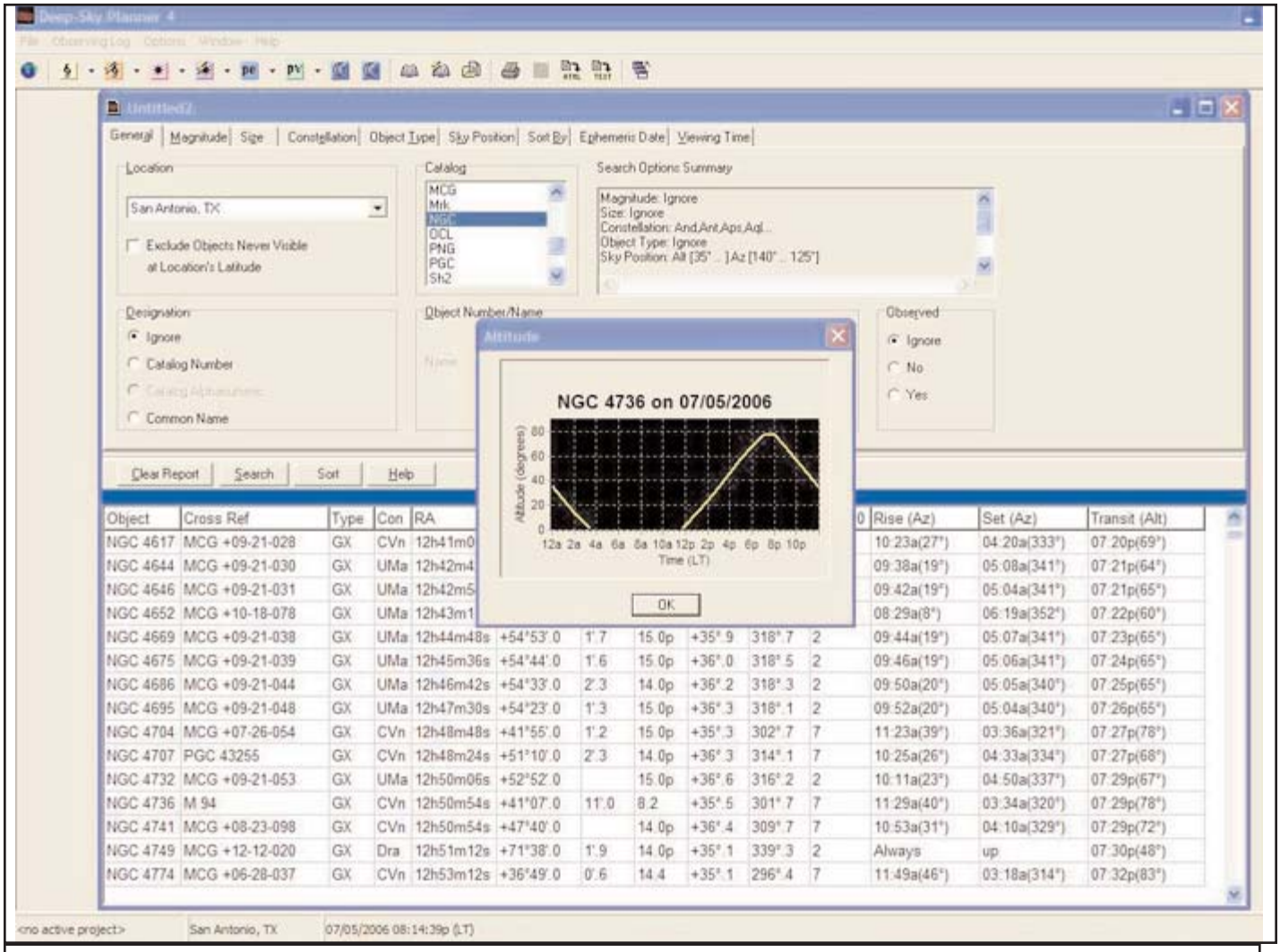

Fig 3.
An interesting option useful to astrophotography is a graphic showing a chosen object's elevation about the horizon for a 24-hour period. This not only shows the object's optimum viewing time, but the period when the object is above a photographically useful elevation.

size to the minimum required to display all the requested data. The output reports generated by Deep Sky Planner can be extensively customized to the observer's needs. Indeed, the customizing options are so vast that it is almost intimidating at first. However, once you "dial in" the report to suit your personal needs, the process is easy.

Darkness reports showing the available nighttime darkness can be generated for any location over a given period of time, be it daily, weekly, monthly, or more. Both text and graphic reports can be generated showing the period of time that the Sun is 18 degrees or more below the horizon. The program will report no darkness if the Moon is up. The graphical darkness reports present one of the few minor quibbles I have about Deep Sky Planner. The graphic is shown as a color-coded bar beginning and ending with midnight for each day of the report, thus the dark bar displaying nighttime darkness is broken in half, separated by daytime in the middle. This feature is counterintuitive to my own thinking and I would prefer that the nighttime darkness be centered in the middle of the display with the start/finish times being noon instead of midnight.

An interesting feature is the ability of Deep Sky Planner to create a graph showing a given object's altitude above the horizon over the time specified for the search. This is particularly useful to astrophotographers who utilize webcam imaging techniques to record sub-arc second detail on lunar and planetary targets. It is a fact that at 60 degrees altitude, atmospheric dispersion is already blurring planetary detail by 0.35 arc seconds, more than enough to degrade a webcam image. The problem increases at lower altitudes, exceeding an arc second of dispersion at 30 degrees above the horizon. A quick glance at an object's altitude graph generated by Deep

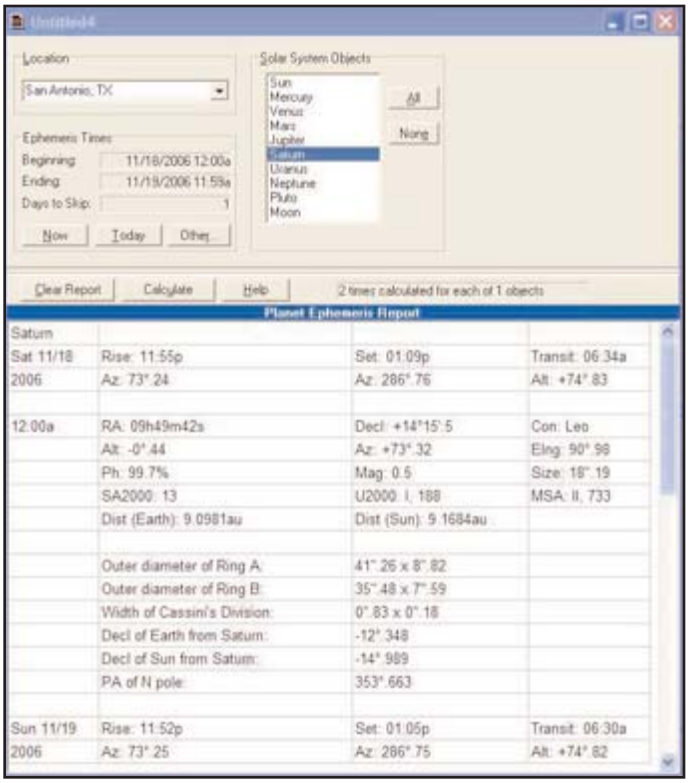

Fig 4.
Planetary observers will find Deep Sky Planner also satisfies their need detailed viewing information on all the planets, allowing the selection of optimum viewing times for solar system objects.

Sky Planner will show the optimum planetary photography time to minimize the effects of atmospheric dispersion.

Deep Sky Planner should not be thought of as a replacement for any of the wonderful star charting and planetarium programs available. Instead, Deep Sky Planner is a very useful companion to these other programs allowing a more educated selection of viewing targets shown by star charting programs. Deep Sky Planner is also a valuable observation logging tool for recording all the relevant data about a particular observation or astrophoto.

Deep Sky Planner is available from Knightware for $54.95. Further product details and ordering info are available at www.knightware.biz.

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