Although the computerized hand control performs all essential functions that are needed for a night out under the stars, many NexStar owners also elect to connect a personal computer (PC) or palmtop computer to their telescope for added features and convenience. And then there is just something about computers and the crowd that purchase GoTo scopes ...

A planetarium program, discussed in Chapter 2, can show you the section of sky currently in the eyepiece of the telescope, helping you to identify objects you are currently observing. You can select an object in that same planetarium program and your PC can direct the telescope to GoTo that object. This makes it very easy to work through several objects in the same area of the sky. Other programs, such as NexStar Observer List, discussed in Chapter 7, can help you plan an observing session. Then when you are out under the stars, the program can direct your NexStar to GoTo each object on your list, one after another.

A PC or palmtop program can easily allow GoTo for objects not in the hand control's database, for example, asteroids and comets. And at least one program, Satellite Tracker, will allow you to view satellites and the International Space Station with NexStar telescopes. Smooth tracking of satellites is possible with the NexStar 8/11 GPS and 5i/8i. Other models are capable of "leapfrog" tracking – the scope jumps ahead and waits for the satellite to pass through the field of view. Then Satellite Tracker leaps forward for the next pass through the eyepiece.

All models of NexStar telescopes are capable of interfacing with a PC or palmtop computer. With the NexStar 5i/8i, the optional computerized hand control is required. All other NexStar models are ready out of the box. In all cases you will need a connection cable, a suitable PC or palmtop computer, and software to run on that computer. The cable connects to the bottom of the NexStar hand control – the RS-232 jack.

There are some details you should be aware of with the little NexStars (the 60/80/114/4 models). The NexStar 80 and 114 were sold in an "HC" configuration with a manual hand control and a "GT" configuration with a computerized hand control. The HC hand control is capable of PC control, but only with the supplied GuideStar software from Celestron. This software allows a PC to emulate the computerized GT hand control, thus providing complete GoTo capability. Also, a supplemental software package, Arrow Keys for
GuideStar , has been developed by Michael Ganslmeier and Matthias Bopp to add on-screen arrow keys to the GuideStar program. Arrow Keys For GuideStar is available for free download from http://www.ddius.de.

Also, as mentioned in Chapter 3, there have been two versions of the GT hand control for the NexStar 60/80/114/4 telescopes. These two versions use different control commands. Thus, a program that is compatible with the new GT hand control may not be compatible with the original GT hand control. Also, the original GT hand control has several bugs in the PC control routines, of which two are most notable. First, after the scope finishes a slew after sending a GoTo command from your PC, you must move the scope manually with the arrow keys on the hand control or the hand control will become unresponsive to future GoTo commands. Second, when the PC retrieves the RA-Dec coordinates from the scope, the original GT hand control reports incorrect coordinates for more than half of the sky. Refer to Chapter 3 if you are not sure which version you have.

What Types of Computers Work

Potentially, any computer with the ability to use a serial port – also known as an RS-232 port – is capable of controlling a NexStar telescope. This includes almost all desktop or laptop (notebook) computers running MS-DOS, Microsoft Windows, the Macintosh OS, or the various flavors of Unix. This also includes most palmtop computers running the Palm OS or Windows CE.

When searching for a laptop or desktop computer, you will find it more convenient to use a model with a built-in serial port. Many newer laptop computers do not have serial ports. In that case, you must purchase a USB-to-serial adapter (about $40) to provide the required serial port. Other nice features include:

- a large keyboard for use with gloved hands;
- extra long battery life or a 12V cigarette-lighter power adapter option;
- a fast processor, lots of memory, and lots of hard drive space – especially if you intend to try your hand at digital imaging.

With palmtop computers, be sure to get a model that offers a serial sync cable (a USB sync cable will not do) or you will not be able to connect it to your telescope without an expensive compact flash serial adapter card. With most palmtop computers, the serial cable is optional; generally only a USB cable is included. Other nice features are:

- a color display – much easier to read in the dark;
- a backlit display or a clip-on light (don’t forget to color the bulb red!);
- long battery life or a 12V cigarette-lighter power adapter option;
- extra memory for larger-object databases in your astronomy software.

Although most astronomy software includes a “night-vision” mode that changes the screen to shades of red, on most computers this will still be too bright. Try using one or two sheets of dark-red plastic instead. Check plastic suppliers, art stores, and camera shops for plastic sheets. It will need to be darker than you might think; try stacking sheets to get the right density. A simple cardboard frame secured to the computer with Velcro will keep it all in place.

You will also find it hard to type on an unlit keyboard. A small, red LED light attached to the top of the display will fix that. Clip-on lights, typically marketed for use in airplanes, will generally be too bright without modification. The key is to use a faint, red light to preserve your eyes’ dark adaptation.