

# Smart Telescopes

**Smart Telescopes:** You might think that with computers in everything from appliances to cars, someone would have put a computer in a telescope by now. And you'd be right! Actually the computer doesn't go in the scope itself, but in the mount, along with electric motors on both axes.

A motorised telescope on a "smart" altazimuth mount can track celestial objects as accurately as one on a more bulky and complicated equatorial mount. Even better, once you set up the scope and initialise the computer with the current date, time, and location, it can automatically point to thousands of celestial objects.

Until recently such futuristic capabilities would set you back many thousands of dollars. But a new generation of battery-powered "smart scopes" has come onto the market at very affordable prices. These instruments can do things no commercial telescope has ever done before. A key press or two gives the times of sunrise and sunset, moonrise and moonset, and the dates of meteor showers, solstices, equinoxes, and eclipses. Or choose a guided tour of the best celestial showpieces, complete with a digital readout describing what we know about each object. These scopes literally give you a beginner's course in astronomy.

Too many new owners of telescopes ? even with decent, well aligned finders ? can't locate anything but the Moon and a few bright stars or planets with their instruments. Eventually they throw their hands up in frustration and their telescopes into a closet. This problem could become a thing of the past in an era when a budding astronomer can point his or her telescope at virtually any object with the push of a button.

Still, these new scopes aren't for everyone. For one thing, the affordable models have smaller apertures than similarly priced entry-level scopes that have no electronics. Second, in an altazimuth telescope the image in the eyepiece rotates as the instrument tracks objects rising and setting. If you want to pursue deep-sky (long-exposure) photography, you need a sturdy and precisely aligned equatorial mount instead ? computer or no computer. Third, these telescopes consume lots of electricity, and some models will exhaust a set of batteries in less than one night's observing. Finally, if your "smart scope" fails to show you a particular object, you may have trouble figuring out whether your eye or your telescope is to blame ? that is, unless you know the sky and your charts well enough to confirm that the instrument is pointed to the intended spot on the sky.