

# Celestron Skyscout Scope 90

## A fun combo - finding objects has never been so cool!

By Erik Wilcox

Since its release, everyone seems to be talking about the Celestron SkyScout Personal Planetarium. On its own, it's an innovative and useful tool for locating and identifying a large assortment of objects in the night sky. But one question I kept hearing on all the astronomy message boards was, "Can I mount it to my telescope and use it as a manual 'go-to' system?" The short answer was no, if the telescope's optical tube was made out of steel. The reason is that the SkyScout relies on GPS satellites to find objects, and magnetic sources can cause interference.

Well, Celestron must have been listening. The new Celestron SkyScout Scope answers the question by employing a non-magnetic aluminum optical tube, finderscope, focuser, tube rings, and SkyScout mounting hardware, so magnetic interference isn't an issue. But how well do the SkyScout and scope work together?

First, I'll begin with the scope itself, since the ability to find objects would be useless if the views through the eyepiece weren't any good. The scope in question is a 90-mm  $f/7$  achromatic refractor. It arrived in a large, well packed box, complete with everything needed to get outside and view on the first night. ...That is, if the skies were clear! The new gear "curse" was certainly with me, as it seemed to be cloudy every evening.

While this did allow me to get accustomed to many of the SkyScout's unique features, it wasn't as satisfying as actually getting some observing time in! I spent a good deal of time with the scope set up in my living room, ready to go at the first sign of a break in the clouds. It's a nice looking scope, and it really got me thinking about how much gear money can buy these days. For just over \$300 (not including the SkyScout itself), this was a nice, solid rig. The mount has thick, stainless steel legs; the optical tube is built well and attractive to look at. Anyone would be proud to own such a scope and its appearance and overall quality gives the impression of a much higher price tag.

For specifics, I'll start with the focuser. For an inexpensive telescope, the R&P focuser is very smooth with no "slop" or play. However, I'd like to see a bit more outward travel than the 2 3/8 inches offered. Some of my eyepieces didn't reach focus until the drawtube was extended almost all the way out and new owners should consider investing in one of the short extension tubes that are readily and affordably available. The 6x30 finderscope is of good optical quality, although it did arrive out of focus. Focusing it was easy, by loosening a locking ring on the finderscope body, and



turning the achromatic lens assembly clockwise or counterclockwise until stars are in focus. Then, the locking ring is tightened down to maintain its position.

The scope comes with two eyepieces, a 40-mm, and a 10-mm. Both appear to be of a Plossl design, and they're about what I'd expect as accessories included with a telescope. The 10-mm is optically good, with tight eye relief that's typical in shorter Plossls. I found the 40-mm difficult to use, as the eye relief is extremely long. Even with the eyeguard peeled up, kidney beaming and "blackouts" were an issue for me. However, an eyeglass wearer might find the long eye relief in the 40-mm useful. Both eyepieces are internally blackened, and I could detect no stray reflections. The 40-mm has a safety groove on the barrel.

A 1.25-inch 90 degree prism diagonal is also included. After comparing it with my own mirror diagonal, I was pleasantly surprised. The prism diagonal shows no visible loss of brightness, and works well for astronomical viewing.

Under a suburban sky, I had several fun and productive nights out with the SkyScout scope. At high power, Mars revealed its slight gibbous phase and a good amount of detail on its disk. The tra-

pezium in Orion was crisp and clear, and easily showed its four main components. Deep sky objects were as good as could be expected for a 3.5-inch scope in a suburban sky. Objects like the Double Cluster, the Pleiades, and M35 were beautiful to view. This refractor really excels with brighter open clusters. Even in my poor sky, it was a nice viewing companion on these objects.

I quickly determined that the optics on this particular scope were excellent. It takes magnification very well, and a Ronchi film strip test revealed straight, crisp lines, with no spherical aberration. Chromatic aberration wasn't bad at all either, considering that this is an *f/7* achromat. The moon had a slight bluish-violet tinge along the limb, and a bit of false color could vaguely be seen on bright stars as well, but it wasn't particularly noticeable.

Staring down the optical tube, everything looked nice and blackened, with the exception of the three screws used to mount the lens cell. Removing the dew cap (which snaps off easily) accesses the screws, and it would be easy to take them out and paint them flat black, should one desire to do so. As is, I didn't note any glare from these screws during my observing sessions.

The Alt/AZ mount, though very beefy for a scope of this size, did get a bit shaky when attempting to focus objects at higher powers. This was mainly the case when the SkyScout was mounted on top of the telescope. A solid rap on the side of the tripod required just over five seconds for the shaking to dissipate. Owners should consider investing in Celestron's very effective anti-vibration tripod pads – these should help tame vibration and significantly reduce those five seconds.

The mount is certainly much more solid than many of the comparable aluminum leg tripods I've used, and the unique clutch mechanism works well. In fact, it's far better than an alt/az mount that I recently owned, where balance was a real problem depending on where the scope was pointed. With this mount, the same lever that moves the scope up or down in altitude is also used to lock its

**Continued on Page 58**

# Celestron SkyScout Scope

## FEATURES

- Designed with non-magnetic materials that do not interfere with the SkyScout sensors.
- Quick and easy no tool setup.
- 90-mm refractor optical design with all coated glass optics and 660-mm (f/7) focal length for crisp, clear images.
- Erect image 6x30 finderscope with quick-release bracket.
- Erect image optics are ideal for terrestrial and astronomical use.
- Pan handle control with clutch for smooth and accurate pointing.
- Rugged pre-assembled tripod with 1.25" stainless steel tube legs provides a rigid and stable viewing platform.
- Accessory tray for convenient accessory storage.
- Adjustable bracket to hold SkyScout (SkyScout Personal Planetarium sold separately).

## SPECIFICATIONS

OPTICAL DESIGN	Refractor
APERTURE	90 mm (3.54 in)
FOCAL LENGTH	660 mm (25.98 in)
EYEPIECE 1	40 mm (1.57 in)
MAGNIFICATION 1	16.5 x
EYEPIECE 2	10 mm (0.39 in)
MAGNIFICATION 2	66 x
MOUNT	Alt-Azimuth
OPTICAL COATINGS	Fully Coated
FINDERSCOPE	6x30 Erect Image
STAR DIAGONAL	Erect Image diagonal -1.25"
CD ROM	The Sky L1
HIGHEST USEFUL MAGNIFICATION	213 x
LIMITING STELLAR MAGNITUDE	12.3
RESOLUTION	1.54 arc seconds
RESOLVING POWER	1.29 arc seconds
LIGHT GATHERING POWER	165 x
ANGULAR FIELD OF VIEW	3 degree
LINEAR FIELD OF VIEW (@1000 YDS)	158 ft (48.16 m)
OPTICAL TUBE LENGTH	25 in (635 mm)
WEIGHT	20 lb (9.07 kg)

The SkyScout Scope is currently available from your favorite Celestron dealer for \$299.



**Celestron has made it easy to attach and align the SkyScout to the Scope 90 with a specially designed, no tools required adjustable mount.**

## CELESTRON SKYSCOUT SCOPE 90

Continued from Page 56

position. This is done by simply turning the end of the lever clockwise - a very nice feature. In azimuth, there's an easily accessible lever on the mount that can be



**Celestron has now introduced the new SkyScout Connect which allows the SkyScout to be connected directly to Celestron computerized telescopes. Now Celestron owners can use the SkyScout to locate any object in its database and their computerized telescope will slew to the same object with a touch of a button.**

tightened to lock position. Aside from a small amount of backlash in altitude, the clutch system works flawlessly.

The only issue I have with the mount is that it's not possible for the scope to point directly at the zenith. Attempting to do so causes the optical tube to make contact with the mount. I was finally able to view at the zenith by adjusting two rear tripod legs so they were a few inches shorter than the front tripod leg, but doing this makes the viewing position a bit difficult. I'd like to see Celestron offer an aluminum "wedge" that could be bolted onto the existing dovetail bracket for easier viewing at the zenith, although it sounds like something enterprising ATMs will have no problem creating.

As for the SkyScout Personal Planetarium, well, it's a lot of fun! The unit mounts onto the telescope with a pre-installed bracket and threads on with a single thumbscrew. Three other protruding knobs fit into the SkyScout's body, further holding it in place. And the bracket itself is adjustable, so that the SkyScout can easily be aligned with the main telescope.

With the included earbuds, an audio description of many objects can be played. This proved very useful and adds to the excitement of the object being viewed. There's also a text description which can easily be scrolled through.

The whole unit is very user friendly. The buttons are large and the screens are easy to navigate. The red backlight has an adjustable brightness level, so it won't destroy your night vision. Finding objects is quick and simple. They're all catego-

rized, so it's easy to pick an object out of the database. Looking through the large viewfinder, it's then easy to "zero in" on an object, and multiple red arrows lead the way. When an object is centered, all the arrows illuminate. There's a "Target" button to quickly identify objects, a USB port to download updates from a computer, and a Sky Tour/SD card slot for interactive tours of the sky (with optional Sky Tour cards).

The unit is made of lightweight, high impact plastic, and has rubber armor for an easy grip, even when wearing gloves. From a design standpoint, it would be difficult to improve on the SkyScout's ease of use.

The SkyScout uses GPS satellites to find its way and thus needs an unobstructed view of the sky. I found that accuracy was compromised when I attempted to use it near buildings and trees. In addition, a magnet icon comes on to let you know when you're too close to a magnetic source, such as a vehicle. Getting the icon to deactivate requires moving at least 6 to 8 feet away from the vehicle.

With an unobstructed sky, the accuracy worked well for aligning the scope. Objects located in the SkyScout were usually within the field of view of a low power eyepiece, or visible in the finder-scope. Using the SkyScout by itself on showpiece objects, stars, etc., gave good results too. The multi-coated viewfinder doesn't seem to diminish the brightness of objects when compared to just viewing them with the naked eye.

Battery life is pretty good and is aided by a feature that shuts the SkyScout off after a few minutes of inactivity. Turning the unit back on requires it to go through the GPS acquisition process again. However, this only takes a minute or two, so it's probably a more than fair trade for the savings in battery power.

Overall, I found that the Celestron SkyScout scope matched up well with the SkyScout Personal Planetarium. As opposed to just having a telescope with a built-in push-to system, this combination allows the user to enjoy the SkyScout on its own as well and to own both at a very modest price. Kudos to Celestron! **III**