



## Steve Walters

### Astrophotographer

### Author, *CCDNavigator*

Steve has been photographing the night sky using film and CCD cameras for over 25 years. He concluded a successful career in telecommunications research during 2002 and has devoted his time and technical abilities to astronomical imaging ever since. Steve's images have appeared in *Astronomy* magazine, *Keystone Outdoors* magazine, *Anacortes Image of the Day* and various web portals. He is a member of the Cherry Springs State Park (CSSP) Dark Sky Advisory Committee and can normally be found at CSSP during new Moon. He currently operates three systems: a 14" Meade SCT

housed in a dome used for visual observing, an Epsilon 180 wide-field astrograph with an STL11000 camera and Astro Physics 1200 mount, and a 16" RCOS Ritchey-Chretien with an STL6303E plus Adaptive Optics (AO-L) on a Paramount ME. The 16" system is housed in an Astrohaven 12' clamshell and can be operated remotely through the Internet. Steve taught Astronomy at Brookdale Community College in NJ.

Steve holds PhD, MSEE and BEE degrees in Electrical Engineering and worked for Bell Labs and Telcordia for 25 years as a researcher and manager. He was named a Telcordia Fellow during 1993 and was also elected a Fellow of the Institute of Electrical and Electronic Engineers (IEEE). He has published numerous technical papers, holds eleven patents and has received many awards for technical innovation and leadership. Before attending college, he served for six years in the United States Air Force, received the Air Force Commendation Medal and is a Vietnam Veteran.

Steve is the author of *CCDNavigator*, a session planning tool for imagers, which is marketed by CCDWare. He represents CCDWare software products at North East Astronomical Imaging Conference (NEAIC) and the North East Astronomy Forum (NEAF). He has given many presentations on session planning for imagers and *CCDNavigator* at astronomy clubs and other events across the United States.

## The Race Against Time: Session Planning with *CCDNavigator*

By Steve Walters

### Abstract:

The sun is setting and the sky is crystal clear. You're at your favorite dark site and your equipment is all set up. You're ready to start but you're not quite sure what you'll image tonight.

Whether you realize it or not, the clock is running and your personal *Race Against Time* to collect good data from your imaging targets has just begun. Unfortunately, without a thorough and solid plan, time is not on your side.

Planning imaging sessions in advance can greatly benefit imagers because:

- ❑ They will have selected interesting targets that are appropriate for their system
- ❑ The target order and position on the night of the session will be established
- ❑ The precise composition will have been determined and seen for their system
- ❑ They'll know when to start and stop imaging each target while avoiding obstacles
- ❑ Their LRGB sequence will maximize resolution and minimize color extinction
- ❑ For each target, a guide star and auto-guider exposure & position will be decided

This presentation examines the issues surrounding each of these topics and demonstrates an all-new version of *CCDNavigator*, a session planning tool that creates an optimal imaging plan and integrates with automation programs such as CCDAutoPilot. Even if your sessions are not automated, *CCDNavigator* can help you select interesting targets for your session, improve the quality of your results and have smoother running sessions. Whether you're using a DSLR or a CCD camera, *CCDNavigator* can also help you get off the beaten path and image new targets that you would never have considered.