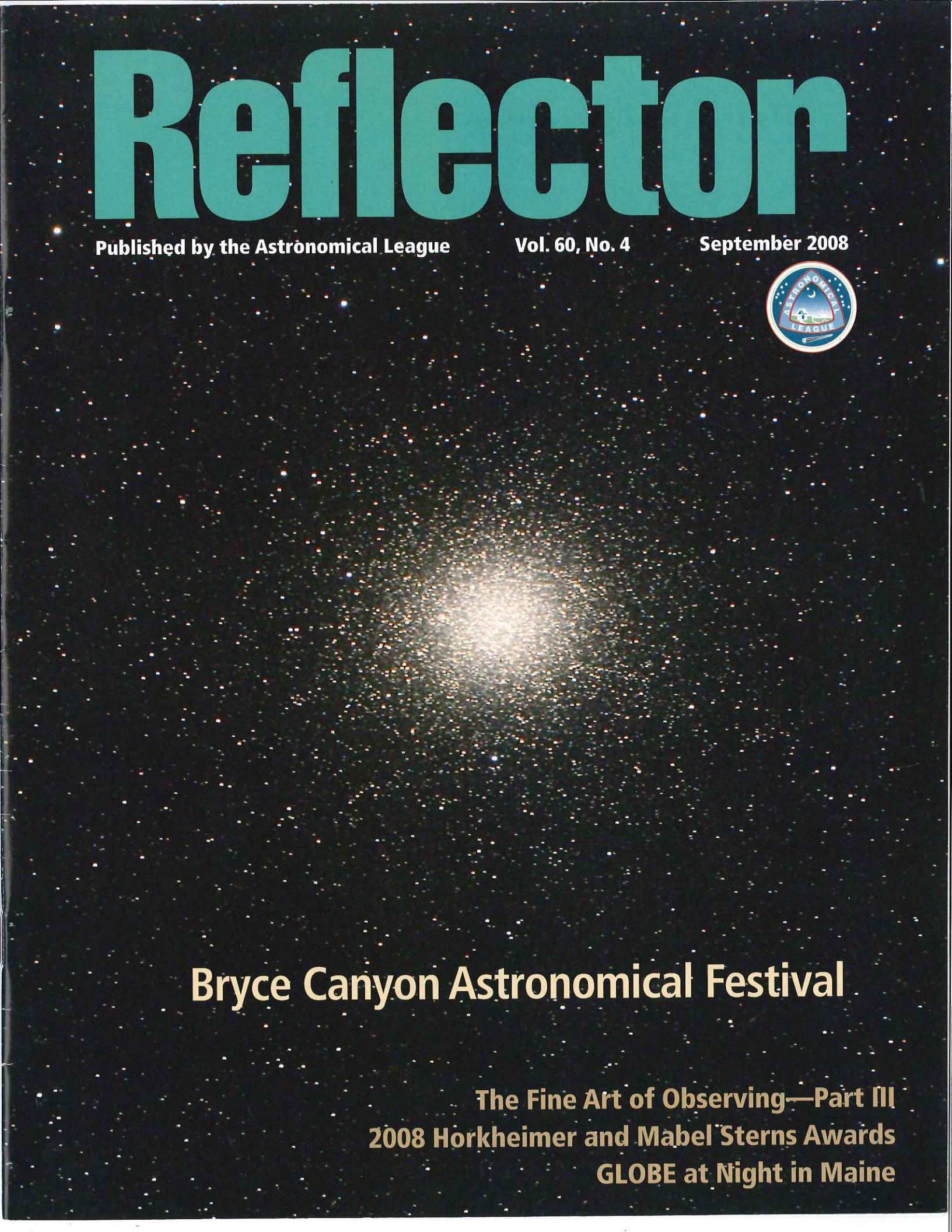
Reflector

Published by the Astronomical League Vol. 60, No. 4 September 2008



Bryce Canyon Astronomical Festival

The Fine Art of Observing—Part III

2008 Horkheimer and Mabel Sterns Awards

GLOBE at Night in Maine

Part 3: Observing open clusters; preparation and execution

By Michael A. Hotka

I have been participating in the Astronomical League's observing clubs since 1988. In that time, I have finished 24 of them, with 3 more soon to be completed. I really enjoy these clubs and they have led me to many celestial objects that I otherwise would not have seen.

My equipment is a 12.5-inch, f/8 telescope. I try to find the darkest skies and often drive almost 2 hours to get there. The photograph below shows a picture of my setup taken shortly before sunset on the Pawnee Grasslands in northeastern Colorado.

Recently, I completed the Open Cluster Observing Club. I chose this one because I thought looking at star clusters would be fun. As it turned out, it was, but also a bit of work. After all, how does one distinguish an open cluster from the numerous background stars in the heart of the Milky Way?

I began by organizing the open cluster list so that I could easily find the clusters in my star atlases. Preplanning your observing trip is a must. You do not want to waste a nice, clear night by spending time determining what you will look at. When you leave for the observing site, you should have your object list already prepared along with any references you will need to aid you in finding elusive open clusters.

The bright Messier open clusters can spoil you. Clusters, like M11, are easy to distinguish from background stars because the density of the stars within them is obviously greater than that of the general field stars, even in an 8-inch telescope. Please refer to *Figure 1*. Often, these Messier clusters stand out in my 8x50 finder scope because they resemble a bright nebulous glow or a tiny knot of stars that stands out in a star-poor region. When you progress to those open clusters that contain few stars, this observing club becomes more fun.

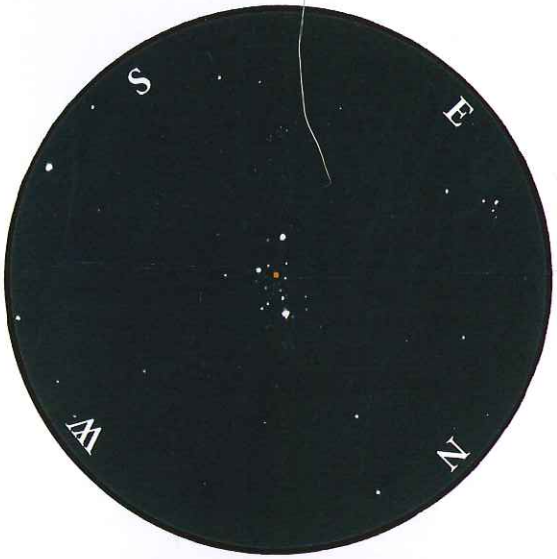


Figure 1: Appearance of M103, a relatively easy open cluster, through an 8-inch telescope. It has a higher density of stars than in the surrounding field. Note that north is not "up."

I use the star-hopping method for finding objects. With this technique, once I arrive at the correct star field, the object will be there. I have found that, if you get to your desired location in the sky and don't find the object that you are looking for, 99% of the time you are in the wrong part of the sky.

My first attempt at locating dimmer open clusters, such as some of the Trumpler's or King's, immediately showed that my current techniques would not suffice. On my next attempt, I took printed star charts that showed enough details so that I could tell exactly where each open cluster was located. I also had a picture of the open cluster for reference so that, once I was in the correct star field, I could identify which stars belonged to the cluster. The Web site http://messier45.com/cgi-bin/dsdb/dsb.pl was invaluable in this endeavor. *Figure 2* shows its main Web page. *Figure 3* shows the resulting information for the open cluster Ru 7.

One thing to keep in mind about these pictures is that they

were probably taken with a much bigger telescope than the one you use. Therefore, there is a lot more detail on them than you will see in the eyepiece. But the brighter stars and nearby bright asterisms appear on this photograph, helping you identify the open cluster.

Another technique for looking at the fainter open cluster is to use several magnifications and see what you might find. For instance, the best view of Ru 7 in my telescope is at 134x. It is barely visible at 80x and not at all in my 20x80 binoculars. This cluster is also visible in an 8-inch telescope using the appropriate magnifications.

The key to completing any observing club of the Astronomical League is to have fun. You will see objects that you would not have normally looked at. Once completed, you will receive a certificate and a beautiful pin for your efforts, and you will also have improved your observing techniques. Before starting any observing club, read its rules and regulations on the AL Web site. Any questions you may have can be directed to the observing club's coordinator. And remember, this is not a race to complete these programs. Relax and have a wonderful time with them, as I do. ✳

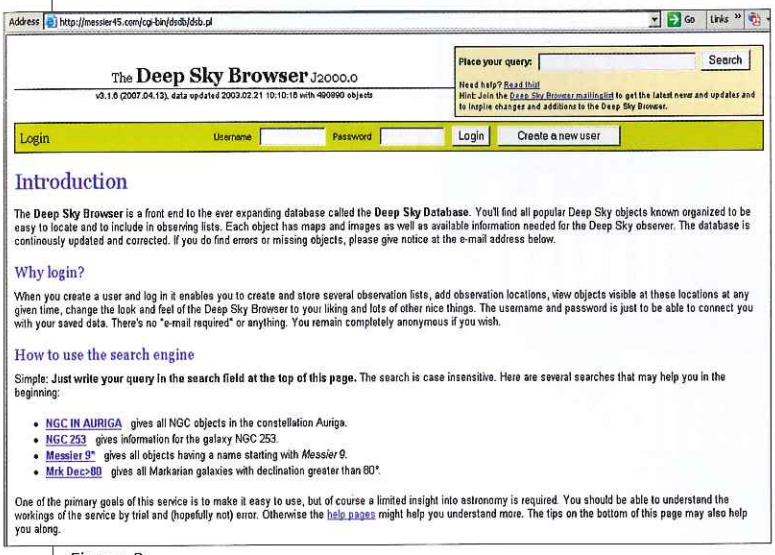


Figure 2.

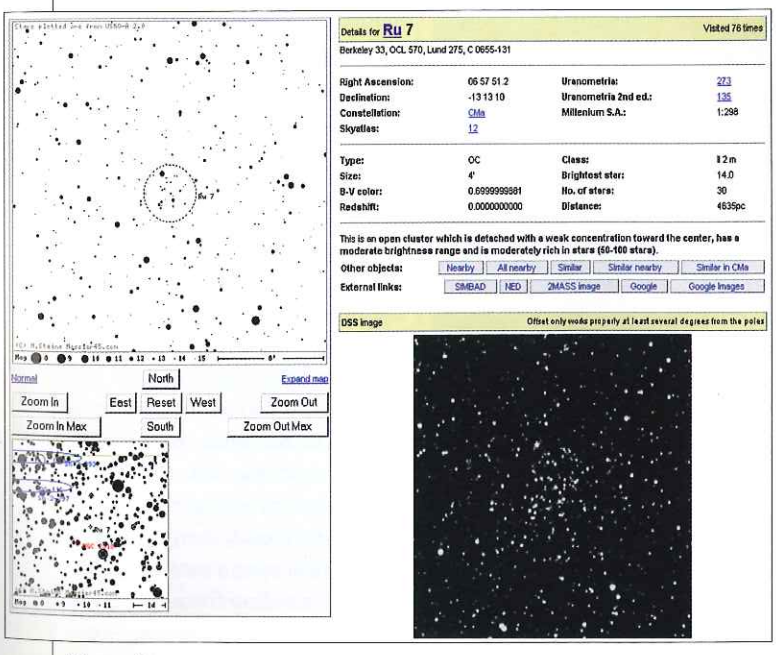


Figure 3.

Kent Marts departs the Reflector staff

"David finds Goliath," "Capturing the Goddess Selene," "This star party would be different than any held before," and "Crayon Moon." Since early 2004, those are only four out of the many articles appearing on the pages of the **Reflector** that have been edited by Kent Marts. After 460 pages in 16 issues, Kent has decided to step down as Editor of the **Reflector** magazine. During his tenure at the helm, the magazine improved its full professional image: It increased its size, now averaging 24 pages per issue; it expanded its "Coming Events" section; and it published amazing celestial images by amateurs. It matured into the vibrant periodical that it is today.

Thank you, Kent, for your years of service to the **Reflector** and for contributing your time and talent to make this publication an important benefit of the Astronomical League.

Opportunity knocks at The Reflector

The **Reflector** is the voice of the Astronomical League and reaches nearly 16,000 members quarterly. This full-color, glossy magazine, averaging over 100 pages annually, features articles by amateur astronomers, contains important League news, runs advertisements and displays many incredible astrophotographs. All of this cannot happen without an Editor.

The Astronomical League is seeking an Editor for its premier publication, the **Reflector**.

The Editor is primarily responsible for soliciting stories and photographs of keen interest to the Astronomical League's amateur astronomer members. Since the magazine is a quarterly, the Editor should be capable of planning ahead to cover major astronomical events. Assisting the Editor are two assistant editors, one of whom proofreads and edits copy, and the other who compiles Coming Events. The editor ultimately works with the **Reflector**'s designer making sure that all copy, photos, and photo captions are complete prior to the designer proceeding to page layouts.

If you have magazine or other publishing experience and are interested in bringing amateur astronomy to the members of the Astronomical League, then this opportunity might be for you. Please contact League President Terry Mann, **starsrus@infinet.com**, or John Goss, **goss.john@gmail.com**, for more details.