



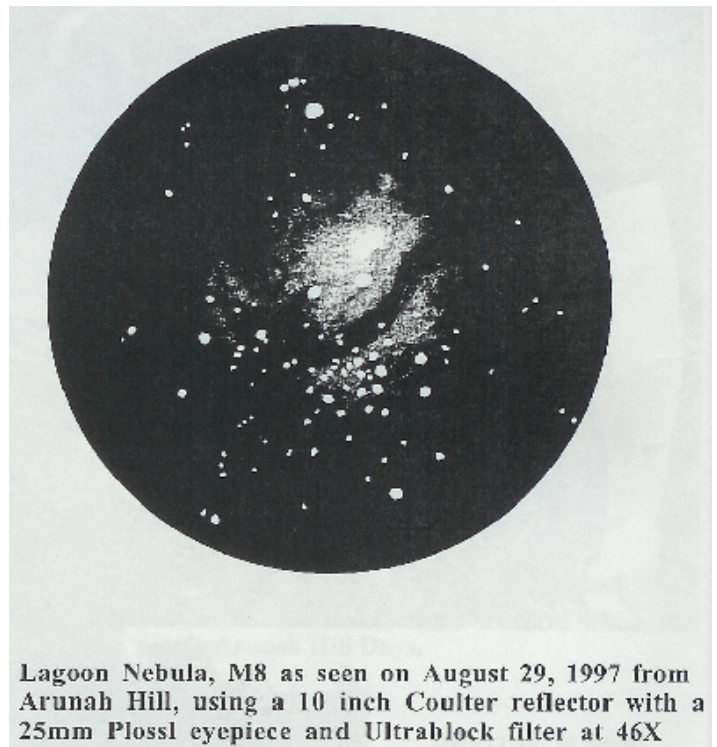
Deep Sky Treasures Observer's Notebook by John Davis

The coming of autumn always brings with it cool, crisp weather and often clear crystalline evening skies. In our column in last year's fall issue we noted a phenomenon which works much to our advantage as we scan the clear, deep skies of autumn. Darkness is coming much earlier and so in the early evening we're seeing summer constellations with their attendant treasures lingering in the sky much longer now. If we look to the south and southwest after dark the "teapot" of Sagittarius is still well above the horizon, harboring no fewer than 21 Messier objects in the immediate celestial neighborhood. We discussed a number of these and other deep sky treasures in our binocular tour of the summer Milky Way in our last issue.

Although several of these could easily fall into the spectacular "showpiece" category, let's focus on one luminary which truly fits that description. It's the "summer version" and certainly a rival of M42, the Great Orion Nebula of winter skies. Of course we're talking about the bright and spectacular Lagoon Nebula and star cluster: **M8**, otherwise known by the NGC designations **6523** (nebula) and **6530** (cluster). "The Lagoon" can be seen with the naked eye shining at around 5th magnitude, and is easily spotted by even the most novice observer. Located just 6° N of γ Sgr at the tip of the Archer's arrow, it forms the upper "long end" corner of a right triangle with δ and γ with γ at the right angle. Binoculars show it very well and a telescope will reveal remarkable detail (see our sketch). The view in apertures of ten inches or more is breathtaking, especially when using a nebula filter such as an OIII, UHC or Ultrablock.

Known by astronomers as an HII region, the hydrogen gas in the area is being excited and ionized by the intense radiation from the hot young stars in the cluster causing the parent nebula to glow. The bright and somewhat mottled nebulosity is spread out across the scene in a curious divided pattern, bisected by what *Burnham's Celestial Handbook* describes as a "wide curving dark channel" - hence the origin of the "lagoon", a name originally applied to it by Agnes Clerke in 1890; 'though the "channel" label would be a bit closer description. Nestled in the brightest part of the nebulosity is a bow-tie shaped bright knot of only about 30 arc sec. known as "the hourglass", illuminated by the 9.5 mag. star Herschel 36. A radio source, the hourglass area is believed to contain young stars just forming, only a few thousands of years old. Throughout the nebulosity deep sky photographs show a number of small dark blotches known as Bok globules, after the late Dutch-American astronomer Bart J. Bok who theorized earlier this century that these "globules" were pockets of dust and gas in which gravitational collapse would initiate star formation.

The associated star cluster NGC 6530, involved in the eastern parts of the nebulosity, contains very hot young stars (Types O5 to AO) only a few million years old. The whole complex of nebula and cluster is larger than the Great Orion Nebula, spanning about 100 light years of space, but lies much further away, at more than 4500 light years and stretches across 1 1/2° of sky. If you look at the field of M8 with low power, or even in good binoculars you might notice some of the involved and outlying stars form a curved line or asterism resembling the long hull of a sailboat, with the top of a shorter mast in the middle and the star cluster aft, nestled in like a sail. Can you see it?

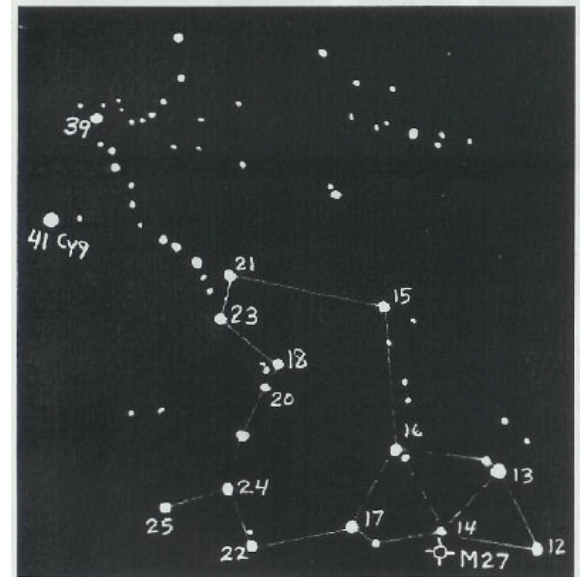


Lagoon Nebula, M8 as seen on August 29, 1997 from Arunah Hill, using a 10 inch Coulter reflector with a 25mm Plossl eyepiece and Ultrablock filter at 46X

Speaking of asterisms, many of these fascinating patterns of stars are seen to best advantage with binoculars, and frequently we devote a portion of this column to binocular viewing. With that in mind, let's look at a very interesting binocular asterism up in Vulpecula which I believe was mentioned a number of years ago by the late Walter Scott ("Scotty") Houston in his popular Sky & Telescope column: "Deep Sky Wonders". He called it "The Cowboy Boot" which actually contains a "sub-asterism" if you will: the letter "M" forming the instep and toe of the boot: (Stars 12, 13, 14, 16 & 17 Vul) with the star 14 Vul stepping on and "squashing" an object featured in our summer issue: **M27**, the "Dumbbell Nebula". The actual "Cowboy Boot" asterism, comprised of mostly 5th mag. stars, can be discerned with the naked eye in a dark sky and is centered at about RA 20h 07m, + 25.0° dec. It can be found at the extreme lower right of chart 9 in Tirion's Skv Atlas 2000 near the 25° N declination numeral in the margin. The actual "boot" is traced out by stars 15, 16, 13, 12, 14, 17, 22, 24, 25 (spur) 24, an unnumbered 5th mag. star, 20, 18, 23, 21, and back to 15 Vul. If you look with binoculars 5° N of the tip of the arrow of Sagitta (toward Cygnus) you should be able to make out the Cowboy Boot's outline, spanning 8° of sky.

While you're in this area, starting at the top rear of the boot (star 21 Vul) and moving slowly just over 4° northeast toward 5th mag. 39 Cyg you can trace with binoculars a fascinating trail of 6th through 8th mag. stars which turns west abruptly at 39 Cyg., then curves back N. This graceful 7° chain of stars could be a "boot lace" for the cowboy boot, but since we've yet to see one with laces, let's settle for calling this asterism the "Cowboy Cascade". Many fascinating fall deep sky objects are out there for us to enjoy, yet space limits us here to a brief mention of one unusual galaxy which we'll plan to feature in greater depth in a future column. Lying near the base of the horse's neck in Pegasus, 3° S. of a Peg at the SW corner of the "Square" is the 10.8 mag. **NGC 7479**, which has been described as one of the best barred spirals in the sky. It is easily visible in apertures of ten inches and over, yet lies over 100 million light years away and should definitely find a place on your observing list as you probe the autumn skies.

Editor's note: If you enjoy asterisms you'll be interested to know John is preparing a booklet surveying a variety of asterisms which can be enjoyed by any amateur stargazer. This will be an original Arunah Hill publication and will help support activities & programs at Arunah Hill.



“Cowboy Boot” asterism in Vulpecula, with “Cowboy Cascade” mostly in Cygnus

