

THE FLINT RIVER OBSERVER



Vol. 1, No. 5

FLINT RIVER ASTRONOMY CLUB

July, 1997

Officers: President, Larry Higgins (227-2233); 1st Vice President/newsletter editor, Bill Warren (638 Pinehill Rd., Griffin, GA 30223/ 770-229-6108); 2nd Vice President/Secretary-Treasurer, Ken Walburn (954-9442); AlCor, Melanie Handy (228-6214); Librarian, Keith Cox (227-8171); Hospitality Chairman, Lee Russell (228-0704). Observing Chairman, Steven "Smitty" Smith (583-2200). Club mailing address: 2431 Old Atlanta Road, Griffin, GA 30223.

Please notify **Bill Warren** and **Melanie Handy** promptly if you have a change of address.

Club Calendar: **Thurs., July 10:** Club meeting (7:30, Beaverbrook media center); **Fri., July 11:** Club observing session, Beaverbrook Elem. (at dark); **Fri., July 18:** Cub Scout Observing (Griffin Fairgrounds, an hour before dark, see map); **Fri., July 25:** Deep-sky observing session, Cox Field (at dark).

President's Message. I'm sorry I was unable to attend the June meeting, but I was emotionally and physically drained from dealing with the aftermath of the accident that took the lives of two of our clients and an instructor that morning. I understand that **Art Russell's** talk was excellent, and well received. Thanks, Art, for a job well done.

On behalf of everyone in FRAC, I want to welcome our newest club members: **Dr.**

Richard Schmude and the **Wellons** family: **Neal, Suzy, Cody and Cindy.** We're happy to have you along. We now have 53 members in all, each of whom is very special to us.

I think you'll like our upcoming meetings and activities. Our July speaker, **Phil Sacco**, is the Atlanta Astronomy Club's new Vice President and Observing Chairman, Beginner's Interest Group. Phil is one of the most likeable, dynamic, knowledgeable and dedicated stargazers you'll ever meet. His topic will be astrophotography. (For those of you who, like me, are uncomfortable with 16-letter words, astrophotography is simply using a camera and telescope to photograph the sky rather than terrestrial objects.)

Our July observing sessions will be held on **July 11** (Beaverbrook) and **July 25** (Cox Field). We're also holding our annual observing session for the Cub Scouts on **July 18** at the Griffin Fairgrounds; I hope you'll toss your binoculars and telescope in the back of your car and help us bring the universe down to Earth for the kids.

More important, I hope you'll take advantage of every opportunity to get out and look at the sky, because the summer sky has more to see than any other season of the year. The Milky Way is *incredible* in July, and three summertime constellations -- Sagittarius, Scorpius and Ophiuchus -- contain 26 Messier objects, or 24% of the entire Messier list!

Our August meeting will consist of a

visit to the Atlanta Astronomy Club's Villa Rica observing site. We had originally intended to go on an observing night, but this way we'll have the site pretty much to ourselves on a Thursday night. Villa Rica has several neat features, including concrete viewing pads, a warm-up room (for wintertime observers), and a shed with a roll-back roof that houses the club's huge 20" reflector and several other smaller telescopes. I hope you'll make plans to attend.

We're working out arrangements for our first annual FRAC Stargaze, an overnight campout/observing party to be held in September at either Cox Field or Beaverbrook. We'll have more information for you about this fun activity as details are finalized.

We've temporarily shelved our plan to review astronomy books, magazines, star atlases, etc., not because it's not important but because we have so many other things lined up.

Finally: you should know that club member **Joe Sheppard** underwent double kidney transplant surgery on June 12th. He's doing fine, recuperating at home. Joe, you're in our thoughts and prayers -- well, mine, at least, since your check for club dues hasn't cleared yet. (Just kidding.) All of us wish you a speedy recovery. (Knowing Joe, it'll be at least two weeks before he's back out under the night sky, chasing objects with his telescope.) If you'd like to send Joe a card or letter (or call him), you can reach him at: 85 Salem Meadows Dr., Covington GA 30209 (phone no. 784-7592). If it's a long distance call, just reverse the charges. (Hey, I'm just kidding, Joe; we don't want to add a heart attack to your other problems!)

-Larry Higgins

June 12 Meeting. Seventeen members showed up for **Art Russell's** presentation on star-hopping, at the conclusion of which an "Independence Day"-sized dark cloud rolled in, cancelling the observing but failing to dampen the enthusiasm generated by Art's talk.

Outside, Art jokingly revealed that **Lee Russell's** new telescope was the jinx that's been causing the bad weather we've been having for the last month. In an attempt to conjure up some clear skies, Lee offered to proclaim to the heavens that he really has no desire to use his new telescope, but Art said it wouldn't work. "You can't fool the night sky," Art explained. "It knows what's in your heart." Thanks, Lee, from all of us whose telescopes are gathering cobwebs.

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THE SHIRTS ARE HERE! THE SHIRTS ARE HERE! If you ordered a hand-painted shirt from **Jerry Armstrong**, you can pick it up at the July meeting.

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Lee Russell is looking for a few good people to help in providing refreshments for our club meetings. You'll be reimbursed out of club funds for whatever you buy, as long as it's not front-row tickets for Cats for you and your wife, hubby, or significant other. Call Lee at 228-0704 if you're willing to help out.

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Our club recently received a nice trophy from the folks at Beaverbrook in appreciation for our becoming one of their Partners in Education. It's on display in the Beaverbrook media center. With our help, Beaverbrook media specialist and FRAC

member **Louise Warren** intends to start an astronomy club at the school in the fall; **Larry Higgins** will call a special club meeting in August for club members to discuss ways we can assist them during the year. (For starters, we're paying for a subscription to the children's version of Astronomy magazine for the school.) As always, we hope you'll want to get involved.

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The annual **Perseids Meteor Shower** will be coming up in mid-August; we'll celebrate the occasion with a special observing session. If you've never attended a meteor shower party, this one will be a good one to break in with because the Perseids is one of the best. We'll have more to say about it in the August newsletter, but for now you might want to start planning ahead to set aside the night of **Tuesday, August 12**, when the Perseids are at their peak.

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Our club recently received its Astronomical League membership certificate. That means you're a member, too, and you should begin receiving your bimonthly bulletin from them.

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A Beginner's Telescope With Your Name On It

by Steven "Saratoga Smitty" Smith

I'm often asked, "I want to get a telescope; which one is the best?" My reply is always the same: The one you're going to use often after you buy it. My

listeners' blank stares deepen as I go on to explain that Telescopes are like hammers... There are many different kinds of hammers; each is designed for use in certain kinds of tasks. The telescope that's right for you depends on what you plan to do with it.

A variety of telescopes are available (e.g., reflectors, refractors, Schmidt-Cassegrains, and off-axis reflectors, to name a few). Each type collects and focuses light in its own special way. Each has its own strong points and limitations for different kinds of astronomical viewing.

Mountings. Telescope mountings are many and varied, but basically boil down to two types, *equatorial* and *altazimuth*. With equatorial mounts, a slow-motion control knob or motorized drive is used to track objects across the sky. Equatorial mounts can be a headache for beginning observers because they must be polar aligned and set up properly before objects can be observed. They are also difficult for a beginner to operate in the dark due to the confusing array of friction knobs, handles, counterweight arms, and height adjusters present.

Altazimuth mounts simplify the task of locating objects, but they do not track: you must move the telescope tube vertically and horizontally to keep the object in your field of view. This can be rather confusing at first, since most astronomical telescopes (including those on equatorial mounts) invert and/or reverse the image. You can't use motorized drive with an altazimuth mounting.

Other Problems. Mountings aside, most beginners' problems with their telescopes can be traced back to flimsy or unstable tripods, or to cheaply made friction locks (the devices that enable you

to move and point the telescope on its mountings but keep it from drooping or swinging away from its target). A quality mount and tripod costs more than a cheaply made "beginner's telescope" (including mount and tripod) sells for!

Another troublesome feature -- and usually an identifying characteristic of unreliable, "el cheapo" telescopes -- concerns focusers and eyepieces. Most el cheapos use .965" eyepieces, which are available only with simple lens designs. Some models come with a .965" focuser and an adapter for standard 1.25" eyepieces, but don't be fooled: most .965" focusers are cheaply made. You're better off with a telescope that takes 1-1/4" eyepieces.

Dobsonians: Altazimuths With an Attitude. In what direction should beginners go in looking for a high-quality telescope at a reasonable price? Well, more than 30 years ago John Dobson, a Californian, had a similar problem. A monk, he had no money or personal possessions but wanted to see what the universe was all about. So he built his own telescope, a Newtonian reflector, out of used scraps and parts. What made Dobson's telescope truly special, though, was its mounting: a brilliantly simple kind of altazimuth mounting that is stable, highly maneuverable, and doesn't add the equivalent of open-heart surgery fees to the price of the telescope. A Dobsonian reflector can be built with basic hand tools, or you can purchase one from any of several reputable manufacturers at a very reasonable price. Aperture (mirror) sizes from 3" and up are available.

For most people (including women and older children), a 4-1/2" or 6" Dobsonian is light enough to be carried and set up with ease, and will gather enough light to fully

acquaint you with a wide range of wonderful objects in the night sky. Prices range from \$200-\$250 for a 4-1/2" Dobsonian to about \$350 for a 6" Dob, depending on the manufacturer. Major manufacturers of Dobsonians under 18" include Celestron, Coulter, Meade and Orion. If you're interested, you can write to them for free information about their telescopes -- and you should talk to some Dob owners as well. Most of them will probably tell you that they plan to keep their Dobs even if they buy another scope for other purposes (e.g., astrophotography).

Be advised, though, that a major magazine recently tested three commercially available 6" Dobsonian telescopes. One of the manufacturers -- ask me and I'll tell you which it was -- had a heavy metal counterweight mounted directly behind the primary mirror; the metal retained heat and did not permit the temperature of the glass mirror to equalize with the outside air. As a result, optical performance was rated as poor and getting a sharp image at high magnifications was virtually impossible. (The other manufacturers' 6" Dobs had no such problems.)

John Dobson never patented his design, nor has he sought money from the companies that have copied it. He contends that telescopes should not be named after people, so he refers to his creation as a "Sidewalk Telescope."

Personally, I feel that Dobsonian owners should use names -- their own -- for their telescopes. In my own case, I like to think of my telescope as a 10" *Smithsonian*! It gets me where I'm going whenever I feel like taking a leisurely, 30 million light-year stroll through the night sky.

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The Case of the Lonely Observer

by Bill Warren

Sure is lonely out here.

It's May 30th, and I'm waiting at the entrance to Cox Field in case anyone shows up for our scheduled deep-sky observing. The weather hasn't cooperated today: as late as 9:00 p.m. the sky was overcast and threatening to rain, but now, at 9:30, it's crystal clear. I brought along my 3-1/2" refractor -- you know, the one that worked fine until I fell down the stairs with it -- and to pass the time I'm looking at double stars and Messiers.

It's getting dark now, the sky a gray shroud with diamonds scattered across it. Mizar, Alcor and Mizar B are lovely, as always. Observing M13, the Great Cluster in Hercules, reminds me of how far I've come in four years.

As a beginning stargazer, my observing technique was like Chevy Chase's sightseeing in the movie "National Lampoon's **Vacation**": find something worth seeing, take a quick peek at it, and hurry on to something else. In those early days, I pretty much took it for granted that all dim objects in the sky look alike.

In my 3-1/2" telescope, M13 was a fairly bright, raggedy-edged ball of light with no individual stars resolved. What I didn't understand back then was that a vast difference exists between looking at something in the sky and actually *seeing* it. I blamed my difficulties in observing deep-sky objects on my faulty vision and small telescope, not on my unwillingness to stay with objects long enough to see everything that careful observing might reveal.

I'd always heard that, like the telescope itself (but unlike photographic film), the

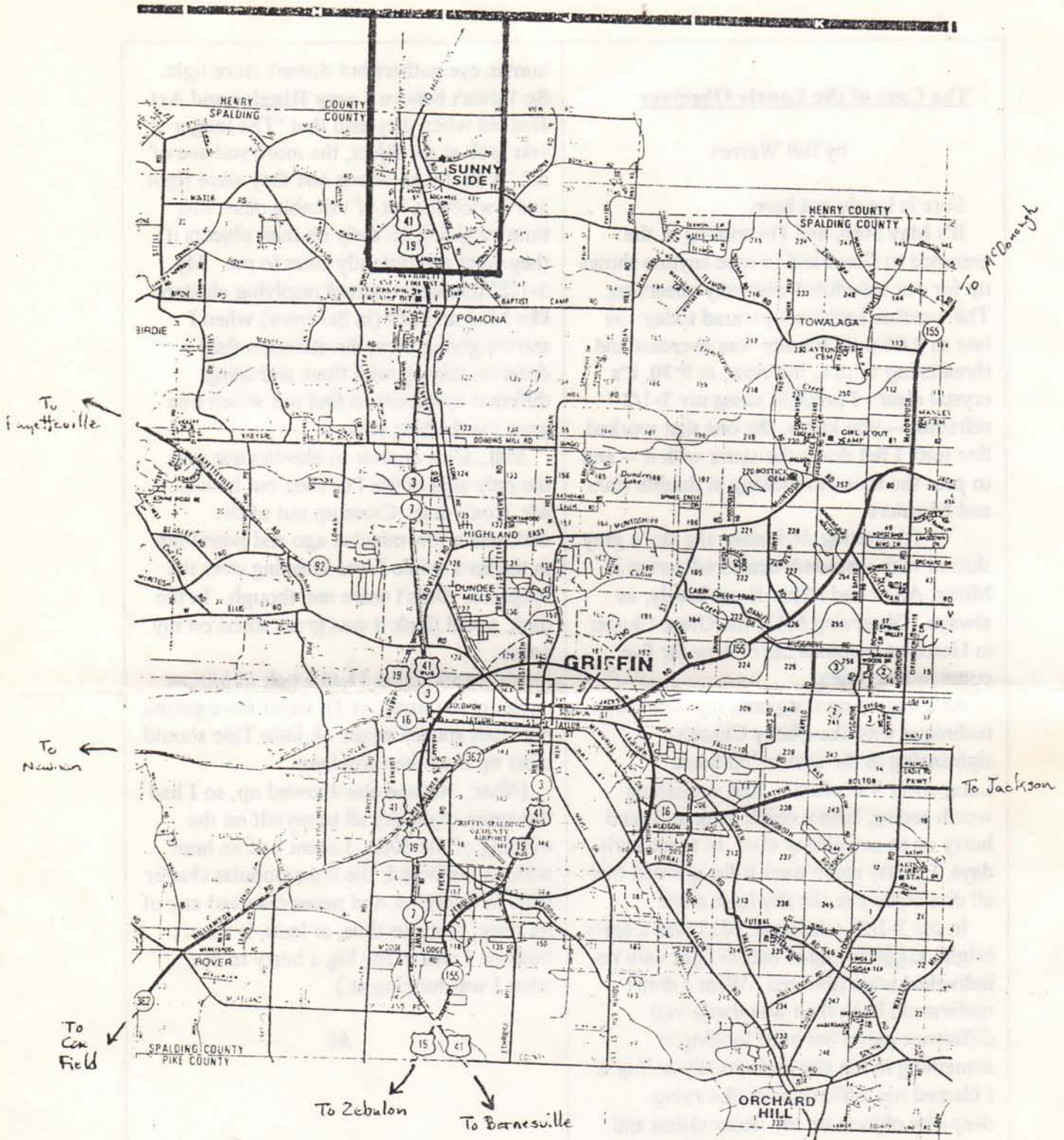
human eye gathers but doesn't store light. So I didn't believe **Larry Higgins** and **Art Russell** when they said that "The longer you look at an object, the more you see of it." Well, I was wrong and they were right, and I wasted a lot of valuable observing time by giving up early on faint objects if they were not instantly clear to me. My 3-1/2" telescope started resolving clusters like M13 and M4 (in Scorpius) when I started giving them the attention they deserve, staying with them and using different eyepieces to find out which one gave me the best view.

Still...it's a quarter to eleven now, and the only sign of life I've seen out here is Mr. Cox's dog. Came up out of the darkness a few minutes ago and nosed me in the back while I was kneeling over the eyepiece. Didn't scare *me*, though. In the dark, you'd think it was grass stains on my pants.

It's a good thing I had a pair of jumper cables in the truck, or I'd never have gotten my heart started again. A little Tide should clear up the other problem.

(*Note*: No one else showed up, so I had the entire night sky all to myself on the evening of the 30th. I spent half an hour with an old friend, the little globular cluster M80 in Scorpius, and never resolved any of its stars. But this time, at least, it wasn't because I was in too big a hurry to see what I was looking at.)

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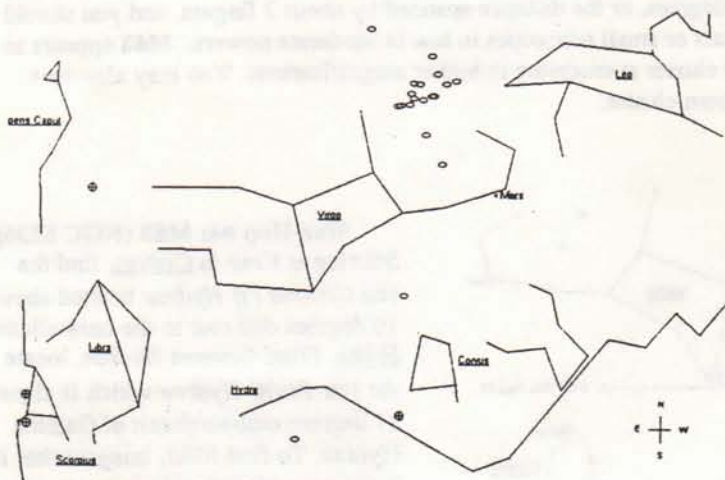


Griffin Fairgrounds is located on the west side of Hill St., almost exactly at the "41 Bus" symbol in the circled area and between the county airport to the south and the National Guard armory to the north. There's a big KIWANIS FAIRGROUNDS sign by the road; if that entrance is closed, use the road a few yards south of the Army tank at the armory.

Beginners Star-Hop; June, 1997

By Art Russell

The last cool evenings of Spring are now but pleasant memories as we start into the muggy days of summer (officially 22 June, but we know otherwise!). Typically, Summer brings with it heat, haze and humidity; all of which are guaranteed to make deep sky observing less than enjoyable. However, its still not a total loss. With perserverence, you can still ferret out the soft DSG (deep sky gray) glow of faint galaxies (admittedly much more difficult under the summer's haze), but more importantly you'll now find the Summer Milky Way making its appearance with open and globular clusters in abundance.



This month, our star hop combines a bit of the best of both the Spring and Summer skies; galaxies from the Spring, and globular clusters from the Summer. Lets get started. We'll begin initially in the constellation Virgo and find **M104**, "the Sombrero Galaxy." Then we'll head south to the constellation Hydra to find **M68** a globular cluster, and **M83** a galaxy. We'll then return to Virgo and head east to find the globular cluster **M5** a globular cluster in the constellation Serpens Caput.

Finally, we'll then head southeast to the constellation of Scorpius to track down the **M4**, a beautiful globular cluster near the star *Antares*, "The Heart of the Scorpion", and the globular cluster **M80** nearby.

As ever, find the darkest possible skies to add to your enjoyment of these sights and make finding them a bit easier. Enjoy!

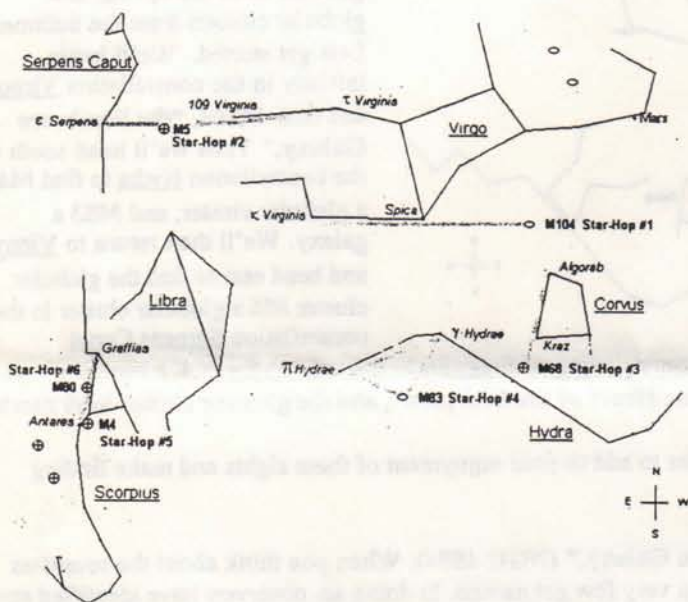
Star-Hop #1: M104, "The Sombrero Galaxy," (NGC 4594). When you think about the countless galaxies and other deep sky objects, only a very few get named. In doing so, observers have identified some unique quality inherent in that object. So it is with "The Sombrero Galaxy." As its name suggests, it can be seen as appearing like a sombrero with the galaxy's core forming the crown and its disk forming the brim.

Locating **M104** is relatively easy at this time because the planet **Mars** provides an immediate orientation to the proper part of the sky; the constellation Virgo. Presently, **Mars** is located in the eastern reaches of Virgo. From **Mars**, the bright star *Spica*, *Alpha-(α) Virginis*, is southeast about 25 degrees, or the distance spanned between your little finger and thumb outstretched at arm's length against the sky. *Spica* is one of our guide stars to **M104**. We'll need another. Look due east of *Spica* at a distance of about 10 degrees, or the distance spanned by the knuckles of your fist held at arms length against the sky, to find the star *Kappa (κ) Virginis*. Starting at *Kappa Virginis*, extend an imaginary line to *Spica*. Extend this line for approximately the same distance as that between *Kappa Virginis* and *Spica*, or about 11 degrees. If you search this area with high power binoculars or a telescope at low to moderate magnifications, you should quickly find **M104**. It should appear as an edge-on galaxy with a very apparent bi-secting dust lane. Use higher powers to glean increasing amounts of detail if possible.

Star-Hop #2: M5 (NGC 5904). Returning to the heart of Virgo. Our next star-hop takes us to the one of the more spectacular globular clusters of the Spring and Summer skies. From *Spica*, look northeast about 15 degrees or the distance spanned by your index and little fingers spread against the sky at arms

length. There you'll find the star *Tau* (τ) *Virginis*. From there, extend a line due east about 11 degrees to the star *109 Virginis*. Extend the line east and a little north for about 15 degrees to the star *Epsilon* (ϵ) *Serpens*. **M5** will be located about half way along and a little south of the line between *Epsilon* (ϵ) *Serpens* and *109 Virginis* and can be successfully found with binoculars and smaller telescopes using low to moderate powers. Here you'll find a beautiful globular cluster with many well resolved stars. At higher powers you may notice what appear to be wisps of stars drifting away from the core of the cluster.

Star-Hop #3: M68 (NGC 4590). We'll leave *Virgo* for our remaining star-hops. Starting at *Spica*, look about 15 degrees or the distance spanned by your index and little fingers, east-southeast to find the star *Gamma* (γ) *Corvi* in the constellation *Corvus* ("The Crow"). From *Gamma Corvi*, extend a line south and a bit east for about 6 degrees, or the distance spanned by 3 fingers, to find the star *Kraz*, *Beta* (β) *Corvi*. Extend the line for about 3 degrees, or the distance spanned by about 2 fingers, and you should find the glow of **M68** in large binoculars or small telescopes in low to moderate powers. **M68** appears as a sparse, not well consolidated globular cluster at moderate to higher magnifications. You may also note many outlying stars straggling away from cluster.



Star-Hop #4: M83 (NGC 5236). Starting at *Kraz* in *Corvus*, find the star *Gamma* (γ) *Hydrae* located about 10 degrees due east in the constellation *Hydra*. From *Gamma Hydrae*, locate the star *Pi* (π) *Hydrae* which is about 11 degrees east-southeast of *Gamma Hydrae*. To find **M83**, imagine that it is the apex of a triangle formed with *Gamma* and *Pi Hydrae* as the other apexes. The distance from both *Gamma* and *Pi Hydrae* to **M83** is about 7 degrees in each case, or about the distance spanned by 4 fingers held against the sky. You should be able to find **M83** in moderate sized telescopes using low to moderate magnifications when you search that area. **M83** will

have a relatively low surface brightness, so its important to take your time. However, its nucleus is relatively bright compared to its halo at moderate magnifications.

Star-Hop #5: M4 (NGC 6121). Starting at *Pi Hydrae*, look east about 30 degrees, or twice the distance spanned by your index and little fingers to find the prominent red-yellow supergiant star *Antares*, *Alpha* (α) *Scorpii* ("The Rival of Mars," or "The Heart of the Scorpion"). From *Antares*, **M4** is located a little more than 1 degree, the width of your little finger, to the west. Binoculars and telescopes will have no problem finding the glow of **M4**, one of the more prominent globular clusters, at this location. In binoculars, **M4** will appear as a circular nebulous object with increasing brightness towards its center. In moderate sized telescopes will resolve many stars and suggest the possibility of lanes in the globular cluster.

Star-Hop #6: M80 (NGC 6093). The globular cluster **M80** is located midway and on-line between *Antares* and *Graffias*, *Beta* (β) *Scorpii*. Medium sized telescopes at moderate magnifications will show **M80** to be a very compact globular cluster in which not many stars are well resolved. You may be able to do better with higher magnifications once you have this globular in the field of view.