MONTHLY OBSERVER’S CHALLENGE
Las Vegas Astronomical Society

Compiled by:
Roger Ivester, Boiling Springs, North Carolina

&
Fred Rayworth, Las Vegas, Nevada

With special assistance from:
Rob Lambert, Las Vegas, Nevada

June 2012

NGC-5353 – Hickson 68 - Galaxy Group In Canes Venatici

Introduction

The purpose of the observer’s challenge is to encourage the pursuit of visual observing. It is open to everyone that is interested, and if you are able to contribute notes, drawings, or photographs, we will be happy to include them in our monthly summary. Observing is not only a pleasure, but an art. With the main focus of amateur astronomy on astrophotography, many times people tend to forget how it was in the days before cameras, clock drives, and GOTO. Astronomy depended on what was seen through the eyepiece. Not only did it satisfy an innate curiosity, but it allowed the first astronomers to discover the beauty and the wonderment of the night sky.

Before photography, all observations depended on what the astronomer saw in the eyepiece, and how they recorded their observations. This was done through notes and drawings and that is the tradition we are stressing in the observers challenge. By combining our visual observations with our drawings, and sometimes, astrophotography (from those with the equipment and talent to do so), we get a unique understanding of what it is like to look through an eyepiece, and to see what is really there. The hope is that you will read through these notes and become inspired to take more time at the eyepiece studying each object, and looking for those subtle details that you might never have noticed before. Each new discovery increases one’s appreciation of the skies above us. It is our firm belief that careful observing can improve your visual acuity to a much higher level that just might allow you to add inches to your telescope. Please consider this at your next observing session, as you can learn to make details jump out. It is also a thrill to point out details a new observer wouldn’t even know to look for in that very faint galaxy, star cluster, nebula, or planet.
NGC-5353 – Hickson 68 - Galaxy Group In Canes Venatici

The NGC-5353 galaxy group, also known as Hickson 68, consists of five to nine galaxies, all within the field of a low power, wide angle eyepiece. For better framing purposes, the four more prominent members are all within a 1/2º field of view, ranging from mags. 11.1 to 14.0 and include NGC-5353, NGC-5354, NGC-5355 and NGC-5350. If your eyepiece field is wide enough, you can catch NGC-5371 shining at mag. 10.5 off to the northwest.

Three galaxies are within reach of a 4-inch instrument, and the fainter forth one, NGC 5355, is visible with an 8-inch. There is a fifth even fainter member, NGC-5358 at mag. 14.6 that can be seen with a 10-inch under a very dark sky, but a 12-inch might be required. This is a beautiful group of galaxies that seem to be seldom observed by many amateurs. If your scope is big enough and the sky conditions are just right, you might be able to catch UGC-8841 which shines at a very dim mag 14.7. For those with the larger light buckets, there are also two more in UGC-8840 and CGCG 219-23, both shining at a very dim mag 15.3.

There’s not much known about this rather obscure but interesting galaxy group but it’s a great challenge for every range of telescope. Since it’s almost straight up at this time of year, it should give you a better chance than usual even in average light-polluted skies. Good luck!
Due to the cloudy, hazy, and downright poor observing conditions so far this summer, I will use a sketch I made last year while attending the East Coast Star Party near Coinjock, NC. This observation was made from along the edge of the Currituck Sound, with the Outer Banks visible across the sound approximately four miles away. For being at sea level, this is a very good site for observing with magnitude six or better skies being the norm.

It was Saturday, June 4, 2011 and the sky was not quite as good as normal but it still was a good night for observing. Using my 10-inch Dob with a 13mm eyepiece at 92X, I observed the galaxy group Hickson 68. This group is composed of five galaxies and all five were visible in my scope.

NGC-5353 and NGC-5354 were bright direct-vision oval hazy spots almost touching. NGC-5350 was a bright and larger circular hazy spot northwest of NGC-5354, best seen with averted vision. NGC-5358 was a small dim streak of gray located east south east of NGC-5354. NGC-5355 was a very dim circular hazy spot, only seen some of the time with averted vision, northeast of NGC-5354.
This is a wonderful little galaxy group to observe with a bright galaxy, NGC-5371, just outside the field-of-view, only 29 minutes to the east north east.
Roger Ivester: Observer from North Carolina

I observed this group on June 19, 2012 from my backyard in Boiling Springs, NC. Conditions were excellent with the temperature at 65º and very low humidity of 44%. The NELM was 5.5, however, it could’ve been better. The first half moon was setting in the tree tops at the end of the session, taking away a bit from the galaxy group. I used a 10-inch f/4.5 Equatorially mounted reflector, a 11mm 82º apparent field of view eyepiece with a 2X Barlow for a magnification of 208X.

The brightest galaxy in the group is NGC-5353 at mag. 11.1 and was very easy to see. It appeared very elongated with a brighter and more concentrated elongated middle. The next brightest was NGC-5350 which appeared mostly round with fairly low surface brightness. I didn’t note any central brightness, however a fairly bright mag. 6.5 orange star just a few minutes west of NGC-5350 was very distracting.

NGC-5354 was just north of NGC-5353 and almost in contact with it. It and appeared mostly round with a very subtle brighter middle. NGC-5355 was just SE of NGC-5350 and was very faint, requiring averted vision, with no visible detail being noted. The faintest and most difficult of the group was NGC-5358 which was SE of NGC-5355. I couldn’t be certain that I was seeing NGC-5358, but there appeared to be a faint blur coming in and out of view, when using averted vision. I would sure like to take another look at this very faint galaxy.
A beautiful and very interesting galaxy group for sure, but seems to be seldom observed by many amateurs.

NGC 5350, 3, 4, 5 and 5358
Galaxy Cluster in Canes Venatici
Date: June 19, 2012
Location: Backyard
Bowling Springs, NV
Scope: 10-inch Reflector
Magnification: 208x
Conditions: Excellent
First Half Moon in the Tree Tops. Helion 5.5
NGC 5350: Faint, 258, Mostly Round, Little Concentration.
NGC 5353: Eclipsed Brighter
Well Concentrated Holes, Brightest of Group.
NGC 5354: Bright, Brighter, Middle, Round
NGC 5355: Difficult, Averted Vision Required.
NGC-5353 is the brightest member of a galaxy group known as Hickson Compact Group 68. More specifically this is the 68th entry in Paul Hickson’s 1982 publication of small galaxy groups. NGC-5353 shines at mag. 11.0 and is approximately 110 million light years away. The galaxy measures 2.4 by 1.2 arc minutes in size, which puts the diameter of the galaxy at 70,000 light years, if the distance is accurate. The next brightest galaxy in the group is NGC-5354 (mag. 11.4), which lies just north of NGC-5353. NGC-5354, like NGC-5353, is classified as an S0 galaxy (spiral with no spiral arms). NGC-5354 is slightly smaller in apparent and real size and may be 20 million light years farther away.

Just north of that pair is NGC-5350 at mag. 11.5. NGC-5350 is a face-on barred spiral galaxy and also a Seyfert galaxy (has an active galactic nucleus). It lies at the same distance as NGC-5353 and is slightly larger in size.

NGC-5355 and NGC-5358 are fainter members of Hickson Compact Group 68. NGC-5355 is a mag. 13.2 elliptical galaxy while NGC-5358 is a mag. 14.6 lenticular galaxy.

My image of Hickson Compact Group 68 was taken June 16, 2012 through a 102 mm (4-inch) f/7.9 apochromatic refractor with an SBIG ST-2000XCMCCD camera. The exposure was 90 minutes, just enough to pick up the spiral arms in NGC-5350. Visually, in a telescope, the three brighter members look like fuzzy spots with no discernible detail. There are other dwarf galaxies in this group too faint to be captured with my small telescope and not bright enough to make it into the New General Catalog. The bright foreground star in the middle of the image is HD121197, an orange giant star shining at mag. 6.5.

My image also captured the impressive face-on spiral galaxy NGC-5371 (also known as NGC-5390), which shines at mag. 10.6. William Herschel discovered it (NGC-5371) first in 1788 and his son John Herschel discovered it (NGC-5390) again in 1831 and didn’t realize it was already cataloged by his father. NGC-5371 lies at the same distance as NGC-5353, which may make it a distant member of Hickson Compact Group 68. If so, that would make it the biggest and brightest member if this galaxy group.
Jim Gianoulakis: Observer from Nevada

Jim gave us no data on his image this month so it is presented here with labels as he sent it in. His only note was the following:

I attached a photo I was able to capture over the last week or so. Still haven't worked out all the kinks but am getting closer. Just glad to have an opportunity to spend some time on it. I hate it when life gets in the way.
**Gus Johnson:** Observer from Maryland. **NOTE:** On April 19, 1979, Gus Johnson, visually discovered Supernova 1979C in spiral galaxy M 100. NASA announced on November 15, 2010, there was evidence of a black hole as a result of this supernova explosion.

Observation dates: April 17, 1980, and June 9, 2007. NGC-5353, NGC-5354 and companion galaxies are about 1/2° from Cor Caroli. With my 8-inch at 60X, galaxies, NGC-5353, and NGC-5354 seem almost as one, but much better at 133X. NGC-5358 is very dim. NGC-5353 has a brighter nucleus than NGC-5354.

See "Sky & Telescope" June 2006, p-57 for a photo of this galaxy group.
I cheated this month. I only had one chance to go out this month and that was during the Desert Under the Stars Public Star Party on June 23, 2012. As Fred will attest, conditions were less than ideal. Not only did I have to contend with a near 1st Quarter Moon, but the wind was blowing at about 15 to 20 mph that night. With those conditions, I didn't set up my computer to capture an image normally. I was able to observe the NGC-5353 Galaxy group through my Mallincam and my Short Tube 120. I was able to see all of the NGC galaxies, PGC 49393, and the one 14.8 magnitude galaxy that Jim Dire captured in his labeled photo. I wasn't aware of the other two PGC galaxies that Jim captured so my field of view was oriented 90° from Jim's orientation and I didn't pick up those two galaxies. The image I'm providing is a snapshot of my CRT monitor that I captured with my iPhone. Not too bad, considering the conditions and the
limitations of the iPhone when it comes to capturing a shot of a cycling CRT monitor (Note the scan lines). There are a couple of dark "bug" galaxies located above the main NGC-5353 cluster.

Conditions didn't allow for the capturing of much detail, but you can see a hint of spiral structure in the almost face-on NGC-5371 on the left side of the photo. NGC-5353 and NGC-5354 appear to be elliptical galaxies, although NGC-5353 is somewhat elongated. Even though it is face-on, I couldn't detect the spiral structure of NGC-5350. All of the other smaller galaxies in the group appear as small ellipticals. I'll have to give this object another shot when the conditions are better.

Note: Instead of trying to produce pretty magazine photos, I attempt to produce an image that approximates what one might see at the eyepiece through a large telescope. It is estimated that the Mallincam quadruples the light gathering capability of the telescope used. With my Short Tube 120, this would equate to about a 19-inch f/5.0 telescope.
Jay and Liz Thompson observed the NGC-5353 group several times. At Cathedral Gorge State Park on May 14, 2012, NGC-5353 and NGC-5354 were apparent through a 12-inch f/10 SCT. The barred spiral NGC-5350 was fainter but readily visible. NGC-5355 was even fainter but still discernible. An additional galaxy in the group, NGC-5358, was seen using a 17.5-inch f/5 on May 18, 2012 from Cathedral Gorge.

On May 27, 2012, using a 14-inch f/11 SCT from their backyard in Henderson, NV, Jay and Liz were able to see the brighter three galaxies (NGC-5353, NGC-5354, and NGC-5350). It was almost first quarter moon, so there was some brightening of the sky background.
Fred Rayworth: Observer from Nevada

I got a chance to observe these galaxies from Redstone Picnic Area on the North Shore Road at Lake Mead, NV on June 16, 2012. The sky conditions were very similar to my May observations with warm, calm skies and what seemed like low haze but the transparency seemed a tad better. The seeing was mediocre at best. I have no idea what the NELM was because I could care less about numbers like that.

The galaxies were just about in the Dobson hole so I was swiveling the scope around, twisting and turning it at odd angles to get the objects in the field. I’m also having a problem with my mirror shifting out of alignment looking above a 45º angle, so the stars were not pinpoints, but that didn’t affect these objects when I had everything in focus.

I was able to see six galaxies in the same field at 102X because I was using an 82º field eyepiece, even though that sixth galaxy, NGC-5371 is not technically part of the group (Jim Dire says differently since I wrote this so I stand corrected). However, it’s a gorgeous mag. 10.5 face-on and shouldn’t be missed.

I tried for the fainter UGC-8841 at mag. 14.7 and the two much fainter UGC-8840 and CGCG 219-23 galaxies, both at mag. 15.3 respectively, but couldn’t bring any of them out that night even though I knew exactly where to look in the eyepiece field.
NGC-5353 was a small almost round haze with a stellar core. NGC-5354 was fainter and more oval. It also seemed to have a stellar core. NGC-5350 looked round and face-on. Much fainter NGC-5355 was just a faint smudge but clearly visible. NGC-5358 was just a hint of a streak next to a star. Just a tad brighter than UGC 8841, I was amazed to see it at all. I think the only reason I nailed it was because it was next to a brighter reference star and it gave me something better to concentrate on. It also may have had a better SB to go for. I would call it an edge-on based on what I saw with averted vision, though photos show it more elliptical.