MONTHLY OBSERVER'S CHALLENGE

Compiled by:
Roger Ivester, Boiling Springs, North Carolina
&
Fred Rayworth, Las Vegas, Nevada

April 2009

The Virgo Cluster (Markharian's Chain)

Introduction

The purpose of this observer's challenge it to encourage others to take up 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 old 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 that is free for the taking.

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 here today. By combining our visual observations with our drawings, and sometimes, astrophotos (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. Please join us and learn how to get the most from peering into an eyepiece.

The Virgo Cluster (Markharian's Chain)

For the visual observer, there's nothing more thrilling than to see the exceptional view. By that I don't necessarily mean the seeing conditions, but rather the object observed. There are many many, or to paraphrase Carl Sagan "billions and billions" of objects to choose from. Well, maybe not "billions" literally, but depending on the size of your scope, there should be more than enough stellar and non-stellar objects out there to keep one busy for a lifetime. That being said, there are the showpieces, or as I call them, the "tourist objects," such as many of the Messiers. Then there are the obscure faint fuzziest that are more observing goals than something that will blow you away. Finally, there are the downright unusual objects that most amateurs had no idea existed. Markharian's Chain is one example. Just for object count alone, this group of galaxies is a show-stopper. Instead of seeing just a couple of smudges, with a 12-inch or larger scope, you'll gaze upon nine galaxies at once if the conditions are right. It may even be possible to see all 9 with a 10-inch scope. That's a lot of bang for the buck. Unfortunately, there probably won't be much to see for those with small apertures such as the 60mm (2.4-inch) refractor. However, even a 6-inch scope should be able to pick out at least a few of these smudges, maybe even a 4-inch refractor. Hey, it's not called the Challenge for nothing!

Observations/Drawings/Photos

Roger Ivester: Observer from North Carolina

I first found out about the Virgo cluster from Tom Lorenzin, author of *1000+ The Amateur Astronomer's Field Guide to Deep-Sky Observing*. Tom asked me if I'd ever viewed all nine galaxies within a 1° field of view centered on M-86. I had not, but was most anxious to give it a try. Using my 10-inch f/4.5 reflector with a 20mm eyepiece (57X), I was able to view with an approximate 1° true field of view. I never saw three of the fainter galaxies with that arrangement.

I did a drawing of the six visible galaxies, then went to (160X) using the 20mm and a 2.8X Barlow, and spotted the fainter ones. I then sketched the three faint galaxies in their appropriate positions and tried my best to draw them to scale based on a picture from Sky and Telescope magazine. My notes are as follows:

M-84: Bright, with a brighter more concentrated middle, and a mostly round shape.
M-86: Bright. Brighter middle, round, very similar to M-84 but not as well concentrated.
NGC-4387: A very faint mostly round blur. Difficult at best requiring averted vision.
NGC-4388: Low surface brightness, elongated slash with an E-W orientation.
NGC-4402: Very faint slash, low surface brightness.
NGC-4413: Very faint and dim, small, very diffuse with little concentration, mostly round.
NGC-4425: Very faint, elongated, axis NS, small and dim.
NGC-4435: Fairly bright, mostly round, stellar nucleus, smaller than NGC-4438.
NGC-4438: Bright, elongated, with a brighter middle.

Notes / Conditions: SEEING AND TRANSPARENCY : EXCELLENT

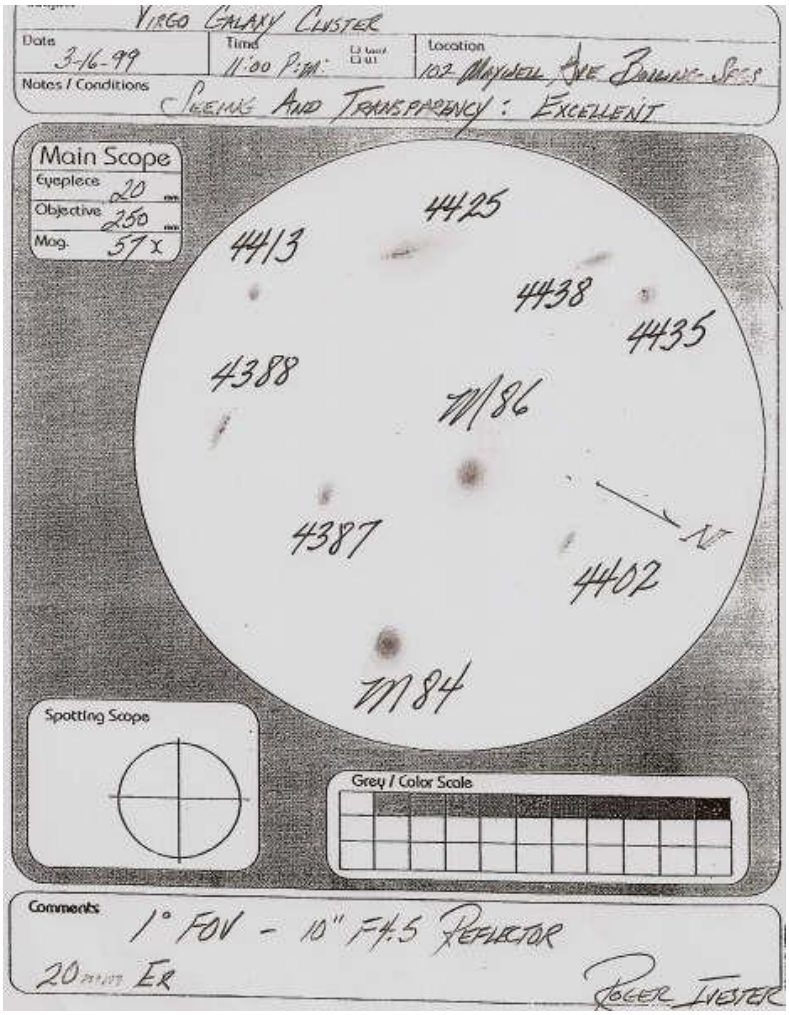
Main Scope
Eyepiece 20 mm
Objective 250 mm
Mag. 57 X

Spotting Scope

Grey / Color Scale

Comments: 1° FOV - 10" F4.5 REFLECTOR
20mm ER

ROGER IVESTER


VIRGO GALAXY CLUSTER
Date
3-16-99
Time
11:00 P.M.
Location
102 Mayfield Ave Bowling Green
Notes / Conditions
SEEING AND TRANSPARENCY: EXCELLENT
Main Scope
Eyepiece 20 mm
Objective 250 mm
Mag. 57x
4425
4413
4438
4435
4388
M86
4387
4402
M84
N
Spotting Scope
Grey / Color Scale
Comments:
1° FOV - 10" F4.5 REFLECTOR
20mm ER
ROGER IVESTER

Fred Rayworth: Observer from Nevada

Over the years, I have seen eight of the galaxies individually, but never knew they were part of a specific group until Roger Ivester told me about it. On March 28, 2009, Virgo was high enough in the sky to take a crack at it, and with a little zap of my green laser finder, I had this group in the field of view. Using a 16-inch f/4.5 Dobsonian and a 26mm eyepiece (70X), I had no trouble seeing all nine galaxies at once. Because of this observing project, I saw that ninth galaxy for the first time, only because I knew it was supposed to be there.

That ninth galaxy, NGC-4387, is mag. 13, and considering the night, it was by far the faintest galaxy I saw all night. If I hadn't known it was there, I would've missed that little smudge. In fact, several other people looked at the group and only counted eight until I pointed out where it was.

Despite a fishbowl effect at the edges of the eyepiece, I had no problem seeing even the galaxies at the edges through that eyepiece. I moved the scope around to study each individual galaxy in the center of the field, but to satisfy the observing challenge, I DID see all nine at once in the field.

All of the galaxies, even M-84 and M-86 were featureless. No mottling or any detail at all, but they were all definite faint fuzzies and had distinct shapes. The most visually striking of the group was NGC-4388, an edge-on spiral. It was a nice, though faint large streak, and out sized and outclassed the similar NGC-4402.

On April 25, 2009, I tried again and saw all nine galaxies right away at 70X. A witness didn't see them all at first, but after I pointed out where to look, the guy did. Another individual with a 12.5-inch f/5 also saw them, but he had to use a 31mm to get them all in the field, and just barely. Though a bit dimmer, I saw all nine galaxies through that 12.5-inch. Back on my 16-inch, I tried 57X and the galaxies fit into the field better, but the background just wasn't dark enough. They looked better at 70X.


4438
4435
4425
M-8L
4413
4402
4387
4388
M-84

Jim Gianoulakis: Observer from Nevada

I didn't have any observational notes, but I took a photo of the group.