

Section III

What to Observe? – The Objects

You might expect a single, long list of galaxies in this section. But a huge dataset, like the *Deep Sky Field Guide*, may eventually turn your enthusiasm into resignation. What to do, if your sky mapping software plots thousands of anonymous galaxies on the screen? In planning an observing session, it might be more adequate to collect and sort the targets under various themes or topics. Therefore different categories, each with a representative selection of objects, are presented here. To get an impression how they look, their appearance in different apertures is also described. This can be helpful to select and grade similar cases, which meet your specific requirements and preferences. Additional notes are also provided for selected objects that have interesting astrophysical properties, unusual features and/or background history. Then use this information and your imagination to create your own personalized observing programs.

What was the reason to choose a combination of photo/textual descriptions in this book? It is generally known that visual observations and photos of galaxies are rather difficult to compare. Conventional photography or CCD imaging crucially depend on technique (spectral sensitivity, filters, image processing) and even images of the same object can look quite different. But in a sense they are “objective.” Against that, the visual impression is naturally subjective. Nevertheless the eye is able to perceive fine structures and contrast differences, even at low light levels – and works occasionally better than artificial detectors.

Textual descriptions can be useful if they concentrate on the main observational facts, while noting any kind of uncertainty. What about sketches? Based on the visual impression, the degree of subjectivity is equal. But the medium “paper” implies a special aspect: the danger of adding “virtual” features. Uncertain structures are difficult to assign. Thus

a sketch or drawing appears like a “fact” – and gets a rating comparable to a photo. Only experienced observers can judge its value. Thus photos are preferred, which show the physical nature of the object best (remember the book is not a mere observing guide).

For each individual galaxy or higher order system (e.g., group, cluster), presented in this section, the best available data are given. The morphological types usually refer to the Hubble classification, but if a further differentiation seems necessary, de Vaucouleurs types are given (if available). Not counting individual galaxies in groups or clusters (though mentioned in the tables), a total of 500 objects are listed.

The data tables are followed by separate tables, which contain the textual descriptions. Around 600 descriptions are given based on the visual appearance of the object with different instruments: binocular (if possible), medium aperture telescope (6–10”), large aperture telescope (13–20”, sometimes even larger). To create a fairly homogenous set, the major part of observations is due to a small number of observers (unaccredited descriptions are from the authors, based on observations with various instruments, from 10×50 binoculars to a 36” Dobsonian):

- Steve Gottlieb (SG): 8”, 13”, 17.5”, 18”, 20”
- Steve Coe (SC): 4.5”, 6”, 8”, 11”, 13.1”, 20”, 25”

To fill the remaining gaps, observations of a few other experienced observers were used: Jens Bohle (20”), Jeffrey Corder (12.5, 17.5”), Lynton Hemer (30”), Michael Kerr (8, 25”), Jeff Medkeff (10”), Tom Polakis (13, 25” together with Larry Mitchell), Frank Richardsen (20”), Brian Skiff (6”), Auke Slotegraaf (15.5”), and Magda Streicher (8, 12”).