We study the globular cluster system (GCS) of the giant elliptical NGC 4374 (M84) in the Virgo cluster using Band R photometry. The radial profile of the cluster number density, $N = 1775 \pm 150$, which together with our distance modulus leads to a specific frequency of $S_N = 1.6 \pm 0.3$. This value is surprisingly low for a giant elliptical, but resembles the case of merger remnants like NGC 1316, where the low specific frequency is probably caused by the luminosity contribution of an intermediate-age population. A further common property is the high rate of type Ia supernovae which also may indicate the existence of a younger population.

The study of globular clusters in early type galaxies has reached a state, where surprises have become rare when only individual galaxies are studied. Progress in understanding the relation between the morphology (i.e. the specific frequency of clusters, their spatial as well as their colour distribution) of a GCS and the host galaxy properties normally emerges from analyzing larger galaxy samples (e.g. Kundu & Whitmore kundu01; Larsen et al. soren01). However, from time to time, one encounters galaxies which exhibit some peculiarity in their GCS, which one would like to understand in a more general framework.

For example, it is well known that “normal” elliptical galaxies have specific frequencies higher than about 3 (see Sect. sec:SpecFreq for the definition and Elmegreen elmegreen99 for a review of specific frequencies). NGC 1316, the brightest galaxy in the Fornax cluster, has nevertheless a low specific frequency of only $\sim 0.9$ (Grillmair et al. grillmair99; Gómez et al. gomez01). Since it is known as a merger remnant, it is tempting to seek an explanation not in the low number of globular clusters, but in the high luminosity due to the presence of an intermediate-age stellar population which formed in the merger a few Gyrs ago. Indeed, Goudfrooij et al. (goud01a), by means of spectroscopy of the brightest clusters, identified several intermediate-age globular clusters among them. Also the apparently high SN Ia rate (NGC 1316 hosted SN 1980 D and SN 1981 D) could indicate a strong intermediate-age population, given that the progenitor population was from a merger.

The question arises whether the combination of a low specific frequency and a high SN Ia rate is ubiquitous or whether more examples can be found pointing to the possibility to use the specific frequency as an indicator for the presence of a younger population.

Early-type galaxies, which hosted more than one SN Ia, are rare. Besides NGC 1316, NGC 4374 in Virgo is one of the fewell. 1957 B, 1980 I (also labeled “intergalactic” due to its location between NGC 4374 and NGC 4406) and 1991bg.

The GCS of NGC 4374 is not well investigated. Ajharet al. (ajharet94) presented VRI photometry of globular clusters for 10 galaxies.

In the light of a possible intermediate-age population, it is worthwhile to investigate in detail the GCS of NGC 4374 with a larger field. Observations, reductions and photometry

Observations The observations were carried out at the 3.5m telescope at Calar Alto, Spain, run by the Max-Planck Institute for Astronomy, Heidelberg. The observation period was 19 to 21 March, 1999. The instrument was the focal reducer MOSCA (www.caha.es/CAHA/Instruments/MOSCA/index.html) equipped with a Loral 2K x 2K CCD. The pixel scale was 0.513 ” /pix and the usable unvignetted field of view $\sim 13'$ x $13'$ (1.5K x 1.5K). The filters in use were Johnson B and R. In the first night several frames, centered on NGC 4374, were acquired, as well as the Landolt fields SA 98, SA 101 and SA 107 at different air masses. The observation log is given in figure [width=8.8cm]h4350f1.ps The observed fields in the three nights. NGC 4374 is at the center. The bright elliptical at the...