

Figure 5: Image of the galaxy at $\alpha = 12^{\text{h}}44^{\text{m}}16^{\text{s}}$, $\delta = -53^{\circ}17'$ (30-sec. exposure).

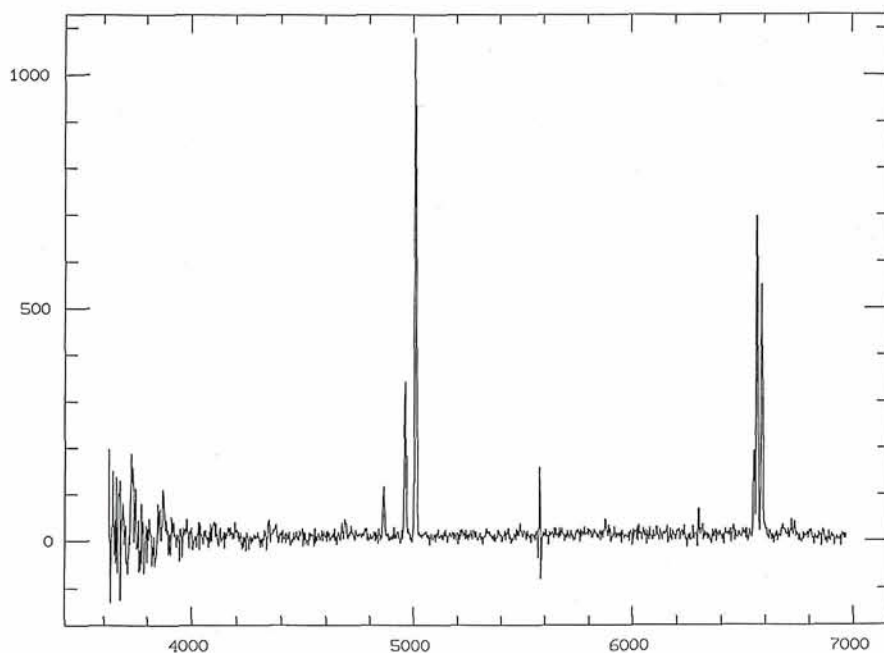


Figure 6: B&C spectrum of the galaxy at $\alpha = 12^{\text{h}}44^{\text{m}}16^{\text{s}}$, $\delta = -53^{\circ}17'$ (60-min. exposure).

latter object was later found to be included as possible PN in the Atlas of Galactic Nebulae (Neckel and Vehrenberg, 1990).

Among the candidates that are not PN, a few are identified as emission-line galaxies, at relatively small redshift (cf. Sabbadin et al., 1989). This is especially interesting as our search concentrated on low galactic latitude fields where the extinction is usually very high, some of these galaxies may be nearby "backyard" objects.

The spectrum of one of these galaxies is shown in Figure 5. This galaxy ($\alpha = 12^{\text{h}}44^{\text{m}}16^{\text{s}}$, $\delta = -53^{\circ}17'$) has redshift $v \approx 1800 \text{ km s}^{-1}$, from the position of the emission lines typical of HII regions. The extinction, implied by the ratio $\text{H}\alpha/\text{H}\beta \approx 3.6$ is quite small. Finally, the preliminary investigation suggests an irregular morphology (Fig. 6).

The full reduction of the first run of observations is now in progress, and we are confident to collect much more material in the future. We hope therefore

to be able, in a relatively short time, to perform a statistical analysis of the physical properties of this class of compact PN.

References

- Aller, L.H.: 1984, *Physics of Thermal Gaseous Nebulae* (Reidel, Dordrecht).
 Cappellaro, E., Turatto, M., Salvadori, S., Sabbadin, F.: 1990, *Astron. Astrophys. Suppl.* **86**, 503.
 Neckel, Th., Vehrenberg, H.: 1990, *Atlas of Galactic Nebulae: Part III*. Treugesell-Verlag K.G., Düsseldorf.
 Sabbadin, F.: 1986, *Astron. Astrophys. Suppl.* **65**, 301.
 Sabbadin, F., Capellaro, E., Salvadori, L., Turatto, M.: 1989, *Astrophys. J. Letters* **347**, L5.
 Turatto, M., Cappellaro, E., Sabbadin, F., Salvadori, L.: 1990, *Astron. J.* **99**, 1170.

New ESO Preprints

Scientific Preprints

(March – May 1991)

753. M.-H. Ulrich: The Signatures of an Accretion Disk in the Electromagnetic Spectra of Quasars and AGNs. Proc. of the 6th IAP Meeting/IAU Coll. No. 129, Paris, 2–6 July 1990.
 754. M. Stiavelli: Dissipationless Galaxy Formation? Proc. of TEXAS/ESO/CERN Symp. on "Relativistic Astrophysics, Cosmology and Fundamental Physics", Dec. 16–21, 1990, Brighton.
 755. M. Stiavelli and L.S. Sparke: Influence of a Dark Halo on the Stability of Elliptical Galaxies. *Astrophysical Journal*.
 756. R.P. Saglia, G. Bertin and M. Stiavelli: Elliptical Galaxies with Dark Matter: II. Optimal Luminous-Dark Matter Decomposition for a Sample of Bright Objects. *Astrophysical Journal*.
 757. ESO Photographic Laboratory: ESO Contributions to the Meeting of the IAU Working Group on Photography. Garching, October 30–31, 1990. To be published in the Proc. of the meeting (ed. J.-L. Heudier, Observ. de Nice, France).
 758. B.J. Jarvis: An Optical (Emission Line) Jet in M87. *Astronomy and Astrophysics*.
 B.J. Jarvis and J. Melnick: The Nucleus of M87: Starburst or Monster? *Astronomy and Astrophysics*.
 759. L. Pasquini and R. Pallavicini: High-Resolution Spectroscopy of Cool Stars at ESO. *Memorie della Società Astronomica Italiana*.
 760. L. Ciotti, A. D'Ercole, S. Pellegrini and A. Renzini: Winds, Outflows and Inflows in X-Ray Elliptical Galaxies. I. *Astrophysical Journal*.
 761. F.R. Ferraro, G. Clementini, F. Fusi Pecci and R. Buonanno: CCD-Photometry of Galactic Globular Clusters. III: NGC 6171. *Monthly Notices of the Royal Astronomical Society*.

762. M. Bersanelli, P. Bouchet and R. Falomo: JHKL' Photometry on the ESO System: Systematic Effects and Absolute Calibration. *Astronomy and Astrophysics*.
763. Bo Reipurth: Herbig-Haro Objects. Review presented at the NATO Advanced Study Institute "Physics of Star Formation and Early Stellar Evolution", held in Crete, June 1990.
764. Non-Thermal Excitation of Helium in Type Ib Supernovae. *Astrophysical Journal*.
765. B.J. Jarvis and R.F. Peletier: The Core of M87: New High Spatial-Resolution Kinematic Measurements. *Astronomy and Astrophysics*.
766. E.J. Wampler, J.-S. Chen and G. Setti: Has Interstellar [Fe x] been Detected in the Spectrum of SN 1987 A? *Astronomy and Astrophysics* (Research Notes).
767. F. Bertola, M. Vietri, W.W. Zeilinger: Triaxiality in Disk Galaxies. *Astrophysical Journal, Letters*.
768. S. Djorgovski, G. Piotto, E.S. Phinney and D.F. Chernoff: Modification of Stellar Populations in Post-Core-Collapse Globular Clusters. *Astrophysical Journal* (Letters).
769. W.C. Saslaw and P. Crane: The Scale Dependence of Galaxy Distribution Functions. *Astrophysical Journal*.
770. P.A. Shaver: Radio Surveys and Large Scale Structure. To be published in *The Australian Journal of Physics*.

Technical Preprint

27. J.M. Beckers: Blind Operation of Optical Astronomical Interferometers: Options and Predicted Performance. *Experimental Astronomy*.

The Striking CMD Features of the Very Metal-Rich Globular Cluster Terzan 1

S. ORTOLANI, *Osservatorio Astronomico di Padova, Italy*

E. BICA, *Universidade Federal do Rio Grande do Sul, Brazil*

B. BARBUY, *Universidade de São Paulo, Brazil*

The region of the Galactic centre is known to have some high metal-content globular clusters (e.g., Ortolani, Barbuy and Bica, 1990, OBB90). Recently, we have started a programme to study such peculiar, generally obscured clusters, interested mostly in the high-metallicity effects on the colour-magnitude diagrams (CMDs) morphology. Such studies can bring valuable information on the evolutionary paths of metal-rich stars, blanketing effects, and to establish their connection with metal-rich populations in bulges of galaxies.

Only little information is so far available for these clusters because, for such studies, it is necessary to observe under excellent seeing conditions, due to the crowding of fields. The extension of the photometry to long wavelength bands, such as I and Gunn z, is required in order to minimize the absolute, as well as the differential reddening influence.

In our previous study of NGC 6553 (Barbuy, Bica and Ortolani, 1989; OBB90), we already revealed peculiar features in the CMDs, as for example the turn-over of the red giant branch (RGB) and its faint tip, due to high opacity in the cooler giants. Now the study of the globular cluster Terzan 1 (ESO 455-SC 23) at only 2.6° from the direction of the Galactic centre reveals a more extreme case. Terzan 1 is a compact cluster, as shown in a V CCD frame taken at the Danish telescope (Figure 1). The

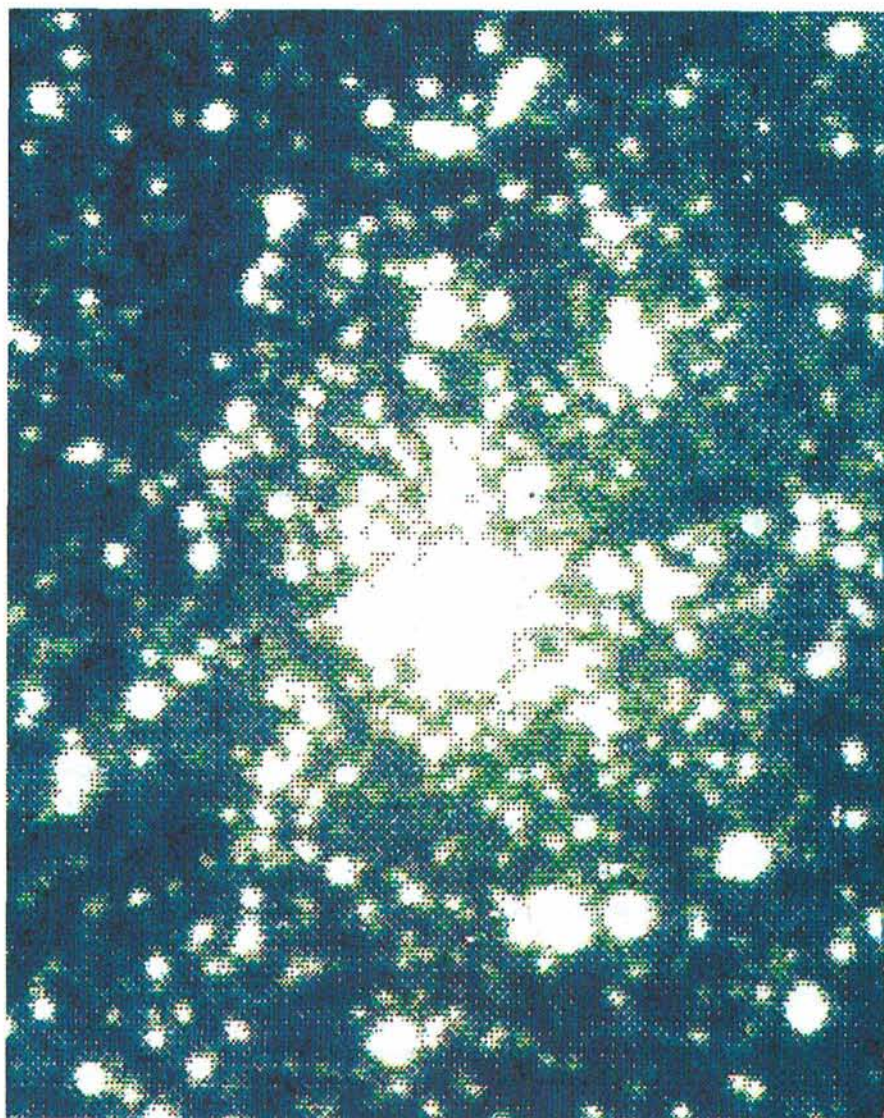


Figure 1: V CCD frame of Terzan 1. ▶