890. M.-H. Ulrich et al.: The Time Variability of the UV Continuum and of Lyα in 3C273. *The Astrophysical Journal.*
891. I. J. Danziger et al.: Gradients of Metal Line Indices in a Sample of Early Type Galaxies.
C. M. Carollo and I. J. Danziger: Line-Strength Gradients and Dynamics of NGC 2663 and NGC 5018.
F. Matteucci: Chemical Evolution of Elliptical Galaxies with Dark Matter.
Presented at the ESO/EIPC Workshop "Structure, Dynamics and Chemical Evolution of Early-Type Galaxies", Elba, 25 – 30 May 1992.
892. O. Hainaut et al.: Imaging of Very Distant Comets: Experience and Future Expectations.
R. M. West: Summary and Discussion of Observations.
Contributions to the Proceedings of the "Workshop on the Activity in Distant Comets."
893. P. François and F. Matteucci: On the Abundance Spread in Solar Neighbourhood Stars. *Astronomy and Astrophysics.*
894. P. Bouchet and I. J. Danziger: Infrared Photometry and Spectrophotometry of SN 1987 A: II. November 1987 to March 1991 Observations. *Astronomy and Astrophysics.*
895. P. Møller and S. J. Warren: Emission from a Damped Lyα Absorber at Z = 2.81. *Astronomy and Astrophysics.*
896. M. A. Prieto et al.: The Extended Nebulosity in the Radio Galaxy 3C227. *Monthly Notices of the Royal Astronomical Society.*
897. C. N. Tadhunter et al.: Optical Spectroscopy of a Complete Sample of Southern 2 Jy Radio Sources. *Monthly Notices of the Royal Astronomical Society.*
898. J. Surdej et al.: Gravitational Lensing Statistics Based on a Large Sample of Highly Luminous Quasars.
899. J. M. Beckers: On the Relation Between Scintillation and Seeing Observations of Extended Objects. Published as a Letter to the Editor of *Solar Physics.*

ESO Proceedings "HIGH-RESOLUTION IMAGING BY INTERFEROMETRY II"

In the September 1992 issue of *The Messenger* we announced the imminent availability of the above-mentioned proceedings. As a matter of fact, they were delivered only at the end of February 1993. We apologize for this delay, which could not be anticipated at the time the September issue of *The Messenger* went to press.

Delivery of the proceedings had originally been promised by the printer for August 1992. In early September more than half of the pages had been printed and a large number of the printing sheets had already been mounted and corrected. Then, in mid-September, the printer had to leave his old premises and move into new ones. At the same time, the staff who had been working on the proceedings left the printer.

It was then that the printer completely lost control of the production process. Part of the original manuscripts disappeared, some of the printed sheets as well. New, corrected sheets were printed without our corrections having been carried out. The quality of many of the illustrations was such that we could not accept them. When they were printed again, the result was hardly better. In addition, progress was extremely slow.

Now the proceedings have been delivered, and, apart from some minor imperfections and a number of "weak" illustrations, the quality is satisfactory.

We are sorry that this all could happen and apologize again, especially to those who have already ordered and paid the proceedings and whose patience has been put to a severe test.

K. K.

900. M. A. Albrecht: Archiving Data from Ground-based Observatories. Presented at Astronomical Data Analysis Software & Systems (ADASS '92), Boston, November 1992.
901. M. Della Valle and H. Duerbeck: The Space Density of Classical Novae in the Galactic Disk. *Astronomy and Astrophysics.*
902. R. L. M. Corradi and H. E. Schwarz: The Bipolar Outflow of He 2-36. *Astronomy and Astrophysics.*
903. P. Artymowicz et al.: Star Trapping and Metallicity Enrichment in Quasars and AGN's. *The Astrophysical Journal.*
904. Xiao-wei Liu and J. Danziger: Electron Temperature Determination from Nebular Continuum Emission in Planetary Nebulae and the Importance of Temperature Fluctuations. *Monthly Notices of the Royal Astronomical Society.*
905. A. Jorissen et al.: S Stars: Infrared Colors, Technetium, and Binarity. *Astronomy and Astrophysics.*
906. Bo Reipurth and S. Heathcote: Observational Aspects of Herbig-Haro Jets. Invited review presented at the Astrophysical Jets symposium held at the Space Telescope Science Institute in Baltimore on 12 – 14 May 1992.
907. P. Molaro et al.: Interstellar CaII and NaI in the SN 1987A Field: I. Foreground and Intermediate Velocity Gas.
G. Vladilo et al.: Interstellar CaII and NaI in the SN 1987A Field: II. LMC Gas. *Astronomy and Astrophysics.*
908. J. K. Kotilainen et al.: CCD Imaging of Seyfert Galaxies: Deconvolution of the Nuclear and Stellar Components. *Monthly Notices of the Royal Astronomical Society.*

Technical Preprint

50. M. Faucherre et al.: The VLT Interferometer: Current Status and Expectations for the Next 20 Years. Proceedings of an ESA Colloquium on Targets for Space-Based Interferometry, Beaulieu, France, 13 – 16 October 1992.

IRAC2 Observations of the Spiral Galaxy NGC 2997

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The galaxy NGC 2997 is one of the beautiful, grand-design, spiral galaxies in the southern sky. It is classified as Sc(s)I in the Revised Shapley-Ames Catalog (Sandage and Tammann, 1981) and has a D_{25} diameter of 8.3 arcmin. Blue images show very regular inner arms with clear dust lanes while the arms bifurcate (break up) in the outer parts (see Fig. 1). Its inclination angle of $\approx 40^\circ$ is well suited for both morphological and dynamical studies. With a linear scale of $1'' \approx 50$ pc on the sky (H_o = 80 km/s/Mpc), it is possible to analyse not only general features but also the finer details such as the material lying between the spiral arms and the bulge.

These characteristics make NGC 2997 a perfect candidate for a detailed study of grand-design spiral structure in disk galaxies. Two important ingredients in making dynamic models of galaxies are their rotation curve and accurate surface photometry maps. Wheras the rotation curve gives the overall potential or mass distribution, maps are required

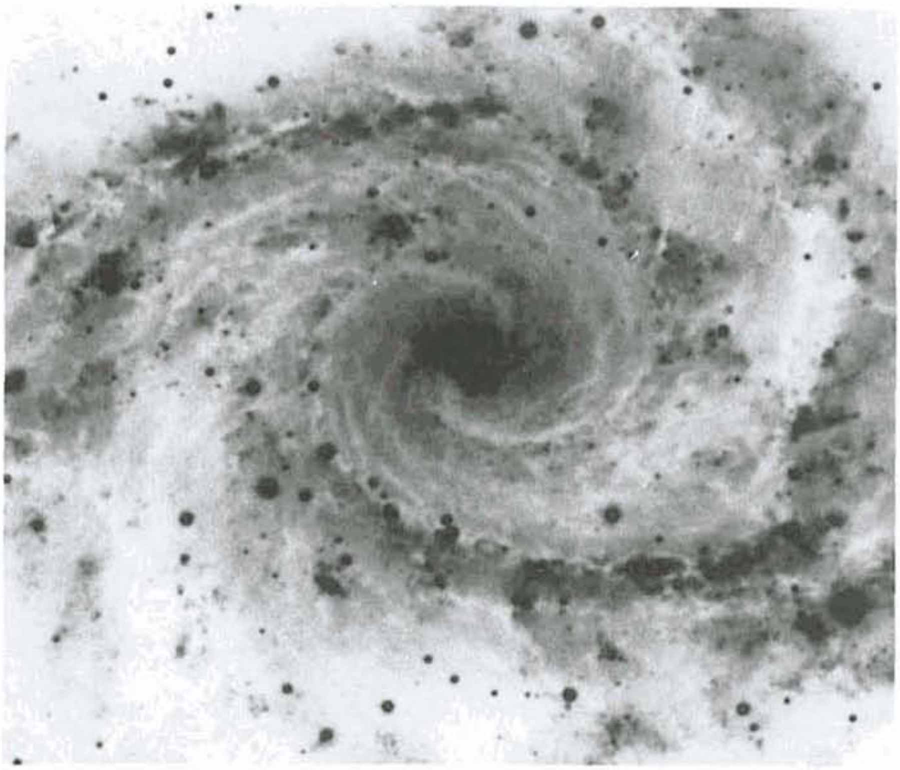

Figure 1: *A 90-minute blue exposure (GG385+IIIa-J) of NGC 2997 made by S. Laustsen at the 3.6-m prime focus in 1977.*

Figure 2: *Single 3-minute image in K′ of a field just south of the centre of NGC 2997. The image was sky subtracted and flat field corrected. No cleaning was applied so that bad pixels and stars in the sky exposure can readily be seen.*

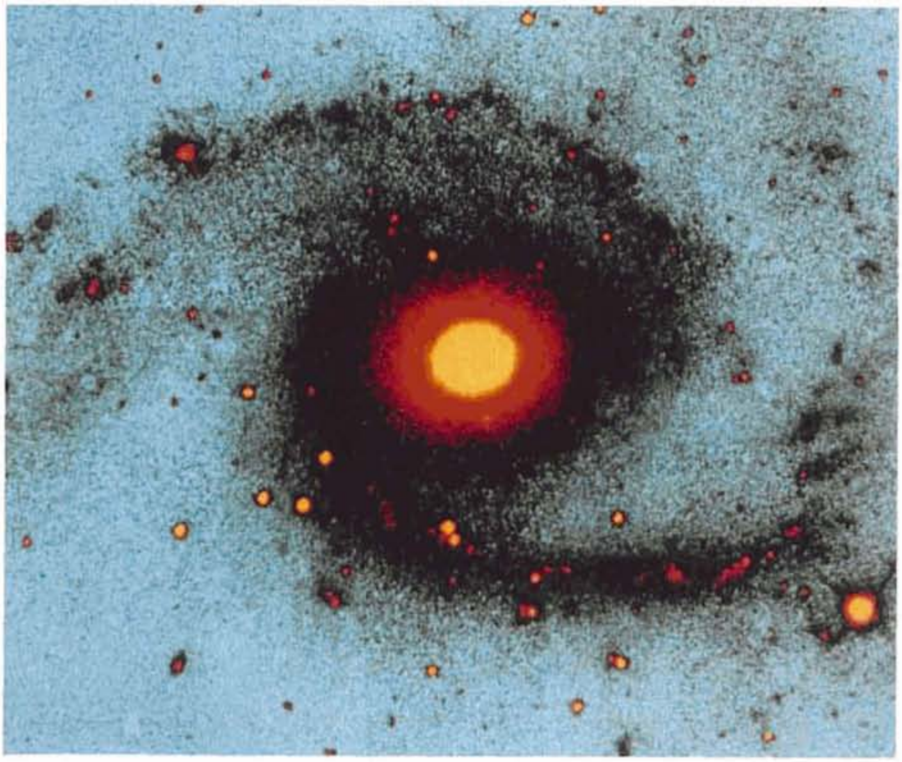

Figure 3: *Mosaic of NGC 2997 in K′ consisting of 6 fields each with a total of 15 minutes exposure taken at the 2.2-m with IRAC2.*

to describe the detailed distribution of matter in the disk such as spiral perturbations. The light distribution on images in the visual wavelength range is difficult to interpret as tracer of mass due to significant population and dust effects. New large-format infrared detectors like the 256 × 256 NICMOS3 array in the IRAC2 instrument (Moorwood et al., 1992) provide an opportunity to observe in the K′ band (2.1 μ) where such effects are much less important. This can give a radical change in the morphology of the galaxy (Block and Wainscoat, 1991).

A large mosaic in K′ covering the main spiral structure of NGC 2997 with six 2′ × 2′ fields was observed in January 1993. A single sky-corrected 3-minute exposure of a field just south of the centre is given in Figure 2. The full mosaic was composed of five exposures of each field with interleaved sky frames giving a total integration time of 15 minutes on the galaxy. The reduction, stacking and composition of the mosaic was done with MIDAS. The final 621 × 435 pixel map of NGC 2997 in K′ is shown in Figure 3 with a scale of 0.5″ per pixel. It reaches a surface brightness of 17.1 mag/arcsec^2 with a signal-to-noise ratio of 10. The slight offset between some of the individual fields is caused by a change in sky brightness during the observations and can first be fully removed when a better model for the relative contributions from sky and telescope to the background is available.

NGC 2997 has a much smoother appearance in K′ than in blue light. The strong dust lanes in the inner parts have disappeared and the Population I objects in the arms are much less prominent. The azimuthal profile to the inner arms is still so sharp that it suggests a strong and possibly non-linear density perturbation in the disk. The northern interarm region is significantly brighter than its southern counterpart while the peak amplitude of the southern arm is stronger. Note also that the arms are much weaker in K′ than in blue outside point where they bifurcate. These features will be compared with a detailed dynamic model of the galaxy including a density wave perturbation of its disk.

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Prototype of the FORS Multiple-Object Spectroscopy Unit Under Test

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Two Focal Reducer and Spectrograph Instruments (FORS) are foreseen for the Cassegrain foci of the VLT telescope units 1 and 3. The FORS instruments will provide imaging, spectroscopy, polarimetry and spectropolarimetry observing modes in the 330 to 1100 nm wavelength options. A detailed description of the FORS instruments is given by I. Appenzeller and G. Rupprecht in *The Messenger* No. **67**, pp. 18–21, 1992.

The slit unit of the instrument is a crucial device for the quality of the spectroscopic observations with FORS. It is the instrument part located in the Cassegrain focus of the VLT in front of the optical train (collimator, grisms, filters, camera) of the instrument. Besides a long-slit mask the FORS slit unit will contain the multiple-object spectroscopy unit (MOS) for simultaneous spectroscopy of up to 19 different objects in the telescope field of view. The MOS unit will also be used to generate a strip mask for the polarimetric imaging mode. Consequently, the full-size MOS unit will consist of a row of 19 pairs of opposite slitlets. During multiple-object spectroscopy each pair of opposite slitlets will form a 22 arcsec long slit of adjustable width. The slits can be moved independently in one direction in the VLT Cassegrain focus surface. In order to match best an observer selected constellation of objects in the field of view by the MOS unit slit pattern, a combination of linear positioning of the slits and instrument rotation around the optical axis will be used. When switching FORS to imaging mode, the slitlets will move to their park positions and clear up the Cassegrain focal plane.

Since the mechanical properties and the accurate positioning of the slitlets are very important issues for the multiple-object spectroscopy and the polarimetric observations with FORS, a prototype of the most critical parts of the MOS unit was manufactured in the course of the on-going final design work for the FORS contract between ESO and the VIC consortium (Landessternwarte Heidelberg, Universitäts-Sternwarte Göttingen, Universitäts-Sternwarte München). Coming from the mechanical workshops in Göttingen the MOS prototype (Fig. 1) arrived in München in December 1992 for the electronics installation and for performance tests.

The central part of the MOS prototype consists of 6 slitlets arranged in two opposite rows in the 208×208 mm wide focal area (Fig. 2). By adequate linear positioning of a pair of opposite slitlets, a single slit of a user-defined width can be formed and positioned at a suitable location in the focal area. The 12-mm length of the individual slits corresponds to 22.5 arcsec in the FORS field of view at the VLT. The slitblade itself is carried by a 250-mm-long support arm which is movable over the full length of the instruments's field of view. On both sides of the focal area the guiding and drive system for the movable slitlets is mounted to a very stiff rectangular platform of about 1 m length which provides a reference for measurements of the MOS prototype with micron range accuracy (Fig. 1). In order to allow for the simulation of the different orientations of FORS with respect to gravity (i.e. the telescope elevation and the rotation of the Cassegrain adaptor around the opti-

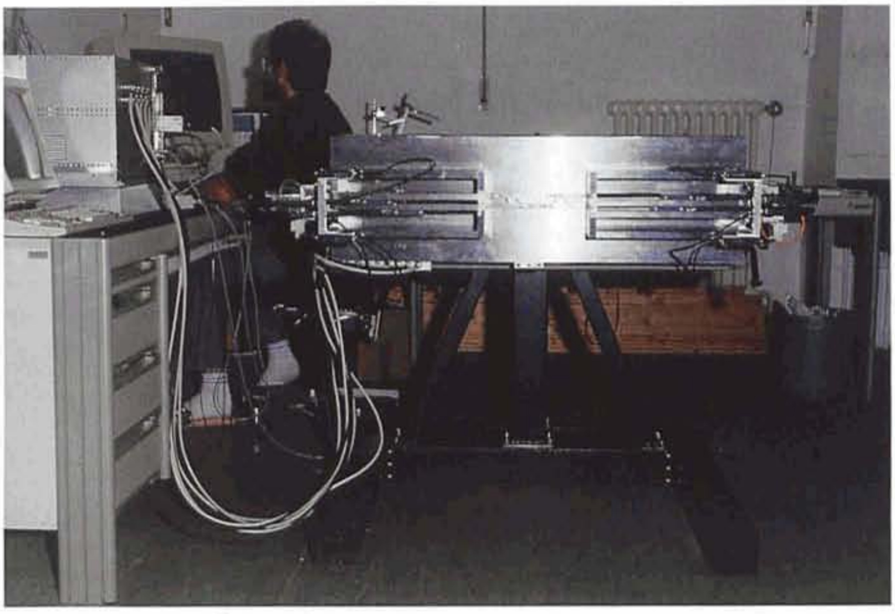

Figure 1: *The MOS unit prototype in its support stand. The MOS unit is pointing to a horizontal position. The rack for the control electronics stands on the desk on the left-hand side of the MOS prototype. The tests are operated by a HP workstation in the background of the laboratory. (Photo by M. Pfeiffer, USM.)*