region of the galaxy, very similar to the filaments in that other famous southern hot-spot galaxy NGC 1097 (Wolstencroft and Zealey 1975).

Summary

The experience with the 4 cm and 9 cm cameras in combination with the 1.5 m telescope has been extremely satisfactory. The power of the large camera is illustrated by figure 3 which should be compared with the 30-minute electronograph of the same area shown in *Messenger* No. 16, p. 1. The Ilford emulsions used from the beginning of the test period have turned out to be of good quality and with very few defects occurring, so that practically all the films provided could be used.

With the good seeing experienced in the 1.5 m telescope dome and the very fine external seeing occurring occasionally, coupled with the high quality of the telescope optics (Andersen and Niss 1979), the electronographic resolution mentioned above will permit a very faint limiting magnitude with this combination of instruments. Limits of about 26 magnitude for stars and 27 magnitude per square arc second for extended objects should be obtained under optimum weather conditions.

The collaboration described has thus been successful. It should be added that the achievements during the period in question have also, at least partly, encouraged the production of similar electronographic equipment for other non-British telescopes such as the ESO 3.6 m telescope on La Silla.

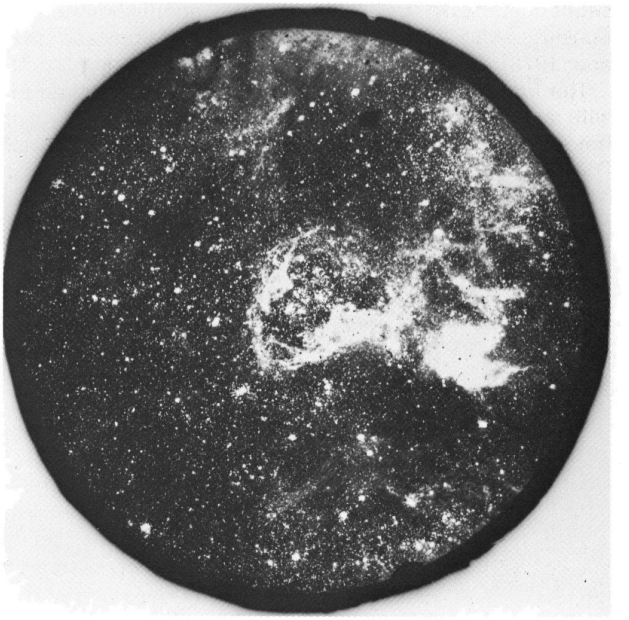

Fig. 3: *A 90-minute exposure of a region around NGC 2081 in the LMC, taken with the 9 cm McMullan camera on the Danish 1.5 m telescope. Emulsion Ilford G 5 and filter "Dark Sky Blue". The exposure may be compared with the one shown on page 1 of Messenger No. 16.*

Acknowledgements

The authors thank staff members at RGO and at CUO for all their assistance. The Danish Natural Science Research Council awarded a special grant for the Danish part of the project and financed Finn Johannessen's work at RGO. A NATO Research Grant has provided essential support for the Danish-British collaboration.

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LATEST NEWS

Discovery of a New Eclipsing Dwarf Nova: OY Carinae

The weather at the beginning of the night April 29/30, 1979 was not excellent on La Silla: Most clouds were gone, but many of them were just waiting near the horizon and threatened to come back. After twilight I pointed the ESO 1 m telescope to the southern dwarf nova OY Car, which is a faint variable star of about 16^m. The first photoelectric measurement, however, revealed 14^{m}8, a bit brighter than normal, and it seemed to brighten up rapidly. Of course, this is not unusual for a dwarf nova: OY Car just was beginning one of its eruptions. I left the telescope on the star monitoring it continuously in 3-second time intervals. After five minutes, however, a new surprise showed up: the intensity began to drop! I checked the diaphragm: the star was properly centred. I looked at the sky: No visible clouds in the field. But the signal diminished more and more, and within a few minutes the star was five times fainter than before! This did not last long: the intensity began to rise again, even faster than the decline, and reached its previous value five minutes later. Could this have been caused by the unstable weather conditions? I kept the telescope on OY Car and found out that the darkening of this star repeated periodically every 91 minutes: no cloud is known to pass so regularly!

There was no doubt that I had discovered a new eclipsing dwarf nova with an extremely short period. Figure 1 shows the first eclipse ever observed: the star was still faint (~15^m) at this time. Two totality phases appear like "steps" in the lightcurve. According to recent dwarf nova models, the first "step" corresponds to the total eclipse of the central parts of the disk and of the white dwarf, while the second

ESO, the European Southern Observatory, was created in 1962 to . . . establish and operate an astronomical observatory in the southern hemisphere, equipped with powerful instruments, with the aim of furthering and organizing collaboration in astronomy . . . It is supported by six countries: Belgium, Denmark, France, the Federal Republic of Germany, the Netherlands and Sweden. It now operates the La Silla observatory in the Atacama desert, 600 km north of Santiago de Chile, at 2,400 m altitude, where ten telescopes with apertures up to 3.6 m are presently in operation. The astronomical observations on La Silla are carried out by visiting astronomers—mainly from the member countries—and, to some extent, by ESO staff astronomers, often in collaboration with the former.

The ESO Headquarters in Europe will be located in Garching, near Munich, where in 1980 all European activities will be centralized. The Office of the Director-General (mainly the ESO Administration) is already in Garching, whereas the Scientific-Technical Group is still in Geneva, at CERN (European Organization for Nuclear Research), which since 1970 has been the host Organization of ESO's 3.6-m Telescope Project Division.

ESO has about 120 international staff members in Europe and Chile and about 150 local staff members in Santiago and on La Silla. In addition, there are a number of fellows and scientific associates.

The ESO MESSENGER is published in English four times a year: in March, June, September and December. It is distributed free to ESO employees and others interested in astronomy.

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and deepest "step" coincides with the coverage of the "hot spot". The second lightcurve shown in figure 1 corresponds to the next night when OY Car had reached the maximum brightness of its eruption (~12^m.4). Only a partial eclipse is observed because the eclipsed body (the disk) is now much more extended than before, and cannot any more be covered totally by the faint red secondary star. Since we see the hot spot radiation separated from that of the disk at certain eclipse phases, we can calculate the relative contribution of both components to the total light, and can follow up this ratio throughout the outburst. This will have important consequences for the dwarf nova outburst mechanism which is still not definitely known.

The discovery of this eclipsing binary was not a pure accident: in January 1979, when I took spectrograms of several dwarf novae with the Image Dissector Scanner at the 3.6 m telescope, OY Car turned out to show a strong, double Balmer emission with a separation of ~1,500 km/s of both emission peaks. This is typical for cataclysmic binaries with high orbital inclination and, thus, justified a search for eclipses. The rest was good luck: fair weather conditions, the begin of an outburst and—last but not least—an excellent cooperation of Holger Pedersen who was scheduled for half of the observing nights, but kindly left me the critical hours for OY Car.

Nikolaus Vogt

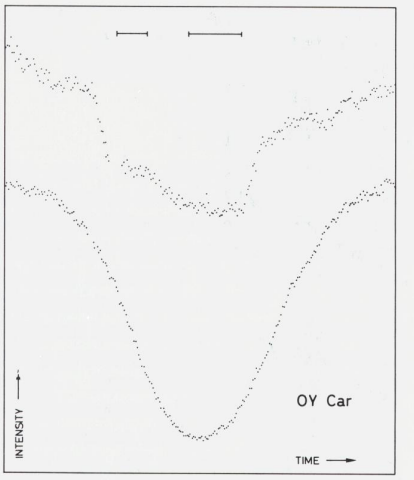

Fig. 1: *Eclipse lightcurves of OY Car, observed on April 29/30, 1979 (upper curve) and April 30/May 1 (lower curve) with the ESO 1 m telescope. The upper curve shows two totality phases which are indicated by bars (explanation see text). Each curve covers a total time interval of about 13 minutes.*

ALGUNOS RESUMENES

La calidad del telescopio danés de 1.5 m sobrepasa las expectaciones.

Desde fines de noviembre del año pasado un nuevo instrumento se encuentra a disposición en La Silla: El telescopio danés de 1.5 m.

En una serie de placas tomadas durante una noche de excelentes condiciones atmosféricas a principios de marzo del presente año, el tamaño de las imágenes variaba de 1 segundo de arco hasta 0.6 segundo de arco. La mejor placa—con una exposición de una hora—muestra bonitas imágenes circulares de 0.5 segundo de arco! Es éste un resultado casi increíble, que comprueba la excelente calidad de este nuevo telescopio.

δ Crucis es variable!

Durante una reciente estadía en La Silla el Dr. Eric W. Elst del Observatorio Royal en Uccle, Bélgica, ha descubierto que una de las estrellas en la Cruz del Sur, δ Crucis, es variable.

Naturalmente hay muchas otras estrellas variables, sin embargo, el presente caso es particularmente interesante porque la amplitud máxima en la curva luminosa tiene una magnitud de sólo 0.006! Esto explica el porqué hasta ahora la variabilidad de la estrella no había sido detectada antes, a pesar de que esta estrella había sido observada muchas veces.

El descubrimiento es una demostración de la excelente ubicación de La Silla y del buen rendimiento del telescopio de 61 cm de Bochum y su fotómetro, con el cual se efectuaron las observaciones.

Nuevas series de diapositivas de ESO

Durante los próximos meses se dispondrá de dos nuevas series de diapositivas.

La primera de éstas consiste de 20 diapositivas de 5 × 5 cm que muestran las instalaciones en La Silla. Incluyen edificios, telescopios y vistas del lugar. Una descripción completa en varios idiomas explica las diapositivas.

La segunda serie contiene algunas de las mejores fotografías que han sido tomados con la cámara del foco primario del telescopio de 3.6 m (corrector Gascoigne). De entre más de 1.000 fotografías, se eligieron 20 diapositivas en blanco y negro (nebulosas, galaxias, etc.).

El precio por una serie de diapositivas es de DM 18.– (o su equivalente) en Europa, y US$ 10,– por correo terrestre a todos los demás países, o US$ 12.50 para su envío por vía aérea (pagadero por adelantado).