



Fig. 4: Three-dimensional representation of R136. The background intensity has been suppressed, the contrast enhanced.

taking $-3^m.5$, we arrive at $L = 3 \times 10^7 L_{\odot}$. The Lyman continuum flux of such an object is more than 5×10^{51} photons/sec. This yields an excitation parameter of 555, while the total value observed for the inner 1,000 pc of 30 Doradus by radio astronomers Churchwell and Walmsley is $U = 630 \text{ pc/cm}^2$. Indeed, together with the 15 remaining OB and WR stars, $U = 625 \text{ pc/cm}^2$ results.

What is the mass of this extremely luminous object? Certainly, its gravitation must be strong enough to prevent it from disruption by radiation pressure. The only important opacity source in such a very hot atmosphere is pure electron scattering. Thus we arrive at the Eddington limit at a mass between 200 and 1,000 M_{\odot} , depending on the hydrogen content. This is already in the mass range of supermassive objects—an intriguing idea!

Explaining the shell around R 136 as being due to a massive stellar wind we arrive at an age of that shell of 3×10^5 years—and that is just of the order of the life time of supermassive stars. The initial density turns out to 200 cm^{-3} , the total energy of the shell to 10^{51} ergs which might also indicate that a number of supernova explosions may have occurred.

The basic assumption of a single star has still to be confirmed. At our request Gerd Weigelt from the Institute of

Applied Optics of the University of Erlangen obtained speckle photometry at the 3.6 m telescope (cf. *Messenger* No. 18, p. 24). He is presently reducing his data. We are most eagerly expecting his results!

Acknowledgements

Dr. Wolfhard Schlosser and graduate student Christoph Winkler contributed essential parts of the work described, which is to appear in *Astronomy & Astrophysics*. The methods of image processing used are described by Dr. Manfred Buchholz, Dr. Tobias Kreidl and Christoph Winkler on page 21.

NEWS AND NOTES

ASTEL—a FORTRAN Programme to Decipher IAU Telegrams

Astronomers have a long tradition of exchanging urgent information by telegram or, more recently, by telex. This concerns mainly new discoveries that must be followed up by other observers, e.g. moving objects like minor planets and comets, or variable sources, like supernovae, etc.

To keep the cost down, a special code has been devised which consists of five-digit groups, interspersed with information about the discoverer, the orbit computer, etc. This code is not difficult to interpret and many astronomers can read an astronomical telegram without having to consult the explanatory manual.

Nevertheless, it sometimes happens that this manual is temporarily misplaced or that somebody with little or no experience has to decipher a telegram. Moreover, to decode a long telegram takes a certain time. To facilitate this task, a FORTRAN programme has now been written, which allows the user to simply type in the telegram groups, one after another, and following the last, the programme will print out the entire text in clear language. The programme also checks the various control numbers in the telegram in order to discover possible transmission errors.

The programme has been implemented on the ESO HP computers at La Silla and in Geneva. With the possible exception of the input/output format, it should be easy to install it in any computer that can compile FORTRAN programmes. Xerox copies of the programme (the source file) are available at request from R. West, ESO c/o CERN, CH-1211 Geneva 23, Switzerland.

ALGUNOS RESUMENES

Bienvenido a La Silla!

Un «nuevo» telescopio se encuentra operando en La Silla desde fines de marzo de 1979. El telescopio fotométrico de 90 cm de la Estación Austral de Leiden en Sudáfrica fue ya instalado en el año 1958, y se decidió su cambio a La Silla debido a las deterioradas condiciones de observación existentes allá, causadas principalmente por la polución proveniente de las cercanas ciudades de Pretoria y Johannesburgo. El instrumento se encuentra actualmente instalado en el antiguo edificio del telescopio de 1 m, conocido también como cúpula del «Chilimap». Tal como se había esperado está trabajando perfectamente en su nuevo ambiente y de él se espera que alivie en algo la gran demanda que existe para observar con el telescopio fotométrico de 1 m de ESO.

La Silla en el cielo ...

En su edición del 1° de diciembre de 1979 el «Minor Planet and Comet Circular» hace referencia a un nuevo planeta menor recientemente descubierto, el 1976 UH, enumerado (2187) en la página 5036, y nombrado LA SILLA en la página 5039.

La dedicación dice: «Nombrado por el cerro situado en el Desierto de Atacama en cuya cima se encuentra el observatorio Europeo Austral». Es interesante notar que el tamaño del nuevo planeta no difiere mucho del cerro La Silla, y — en vista del permanente aumento del riesgo de la polución (luminosa y atmosférica) que amenaza a muchos observatorios (sin embargo por cierto no a los establecimientos de ESO actualmente) — uno se pregunta si no se estará presenciando un ejemplo extremo de planeamiento a muy largo plazo?!

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.

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Un techo para la ESO

El día 8 de noviembre de 1979 marcó una etapa más en la historia de ESO. El nuevo edificio en Garching, al norte de Munich, que será la sede principal de ESO, fue escenario de una alegre celebración con motivo de sus tijerales.

Estuvieron presentes la mayoría de las personas que participaron en el planeamiento y en la construcción, desde sus arquitectos, ingenieros y obreros a algunos miembros del personal de ESO, encabezados por su Director General. Una serie de elegantes discursos dieron el marco adecuado al evento.

Actualmente se está terminando la parte exterior del edificio y muy pronto el concreto se encontrará completamente en su lugar. Se ha comenzado con las instalaciones interiores y se presume que todo estará terminado para recibir al personal de ESO hacia fines del verano de 1980.

Algunas impresiones fotográficas se encuentran en las páginas 13-15.

Estrellas de neutrones

El Dr. Ed Zuiderwijk, del grupo científico de ESO en Ginebra, se encuentra haciendo estudios teóricos y de observación de estrellas de neutrones, las que para los astrónomos cuentan entre los objetos más fascinantes en el cielo.

Las estrellas de neutrones se originan de explosiones de supernovae, donde el centro estelar se derrumba bajo el efecto de su propia gravedad. Su masa es comparable a la de nuestro sol, pero su diámetro es de tan sólo 15 kilómetros. Por lo tanto, la materia de estas estrellas es extremadamente densa y un milímetro cúbico (que corresponde aproximadamente al tamaño de la cabeza de un alfiler) pesa un millón de toneladas.

Sin embargo, aun muchas preguntas deberán ser contestadas en relación a estos objetos, y se espera que el programa de observación a largo plazo, que se está llevando a efecto en La Silla, ayude a contestar algunas de ellas.

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