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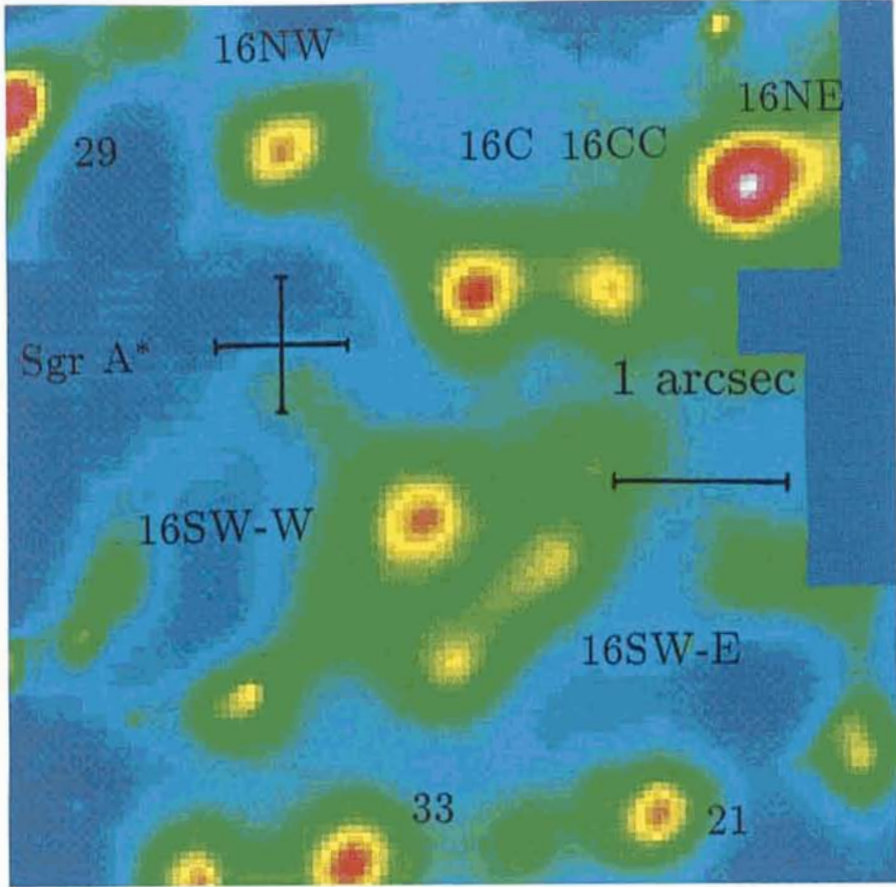
## The GALACTIC CENTRE: Best Images Ever

### First Results from SHARP at the NTT

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At the Max-Planck-Institut für Extraterrestrische Physik a System for High Angular Resolution Pictures, SHARP, has been developed during the last 18 months for observations in the near infrared spectral range (1 to 2.5  $\mu\text{m}$ ). It is based on a 256  $\times$  256 HgCdTe NICMOS3 array manufactured by Rockwell Inc. The camera has an image scale of 0.05 arcsec/pixel at the Nasmyth focus of the ESO 3.5-m New Technology Telescope. The electronics and the data acquisition system allow the recording of frame rates up to 10 Hz for speckle observations with a built-in cold shutter. Appropriate software has been developed for on-line quick-look data reduction (long exposure, shift-and-add, etc.). The system sensitivity at 1 Hz data rate allows 5 $\sigma$  detection of  $K \approx 9.5$  in  $\approx 1$  arcsec seeing and fainter for better seeing.

The first observing run took place between August 18 and 23, 1991. The figure shows a K-band image of the inner region of the galactic centre (6.4  $\times$  6.4 arcsec corresponding to 0.25  $\times$  0.25 pc, North is up and East to the right; a scale of 1 arcsec is marked). The image is a result of  $\approx 1000$  frames with 0.5 sec and 1 sec exposure time



per image using the shift-and-add method and ten iterations of the Lucy image sharpening algorithm. The average instantaneous seeing was of the order of 0.4 arcsec and the resulting final resolution in the image is  $\approx 0.25$  arcsec. In the combination of spatial resolution and sensitivity this image by far surpasses anything available till now. The basic new results on the structure of the near infrared emission of the central

0.25 parsec of the Galaxy emerge already at this early stage of analysis.

First, the IRS16 complex is resolved into about 15 compact sources, most of which may be hot massive stars. Identifications are marked in the figure. Second, we find from repeated exposures a  $K \approx 12.5$  object within  $\approx 0.2$  arcsec of the radio source SgrA\*, whose location and positional uncertainty are marked by the cross in the figure. This source

may represent the long sought-for infrared counterpart of the compact radio source.

We would like to thank the ESO Director General for his vision to admit SHARP at the NTT and the ESO staff at Garching and on La Silla for their excellent professional support and enthusiastic commitment.

## Will La Silla Succumb to the VLT?

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Concern has spread around the ESO community about the future of La Silla. Seeing the great technical efforts required by the VLT, some people fear that, according to the law of "man-power conservation", the efforts at La Silla will be correspondingly reduced, causing in due time a deterioration of its present quality and diversity. Is this apprehension based on real-life experience or rather on expectations?

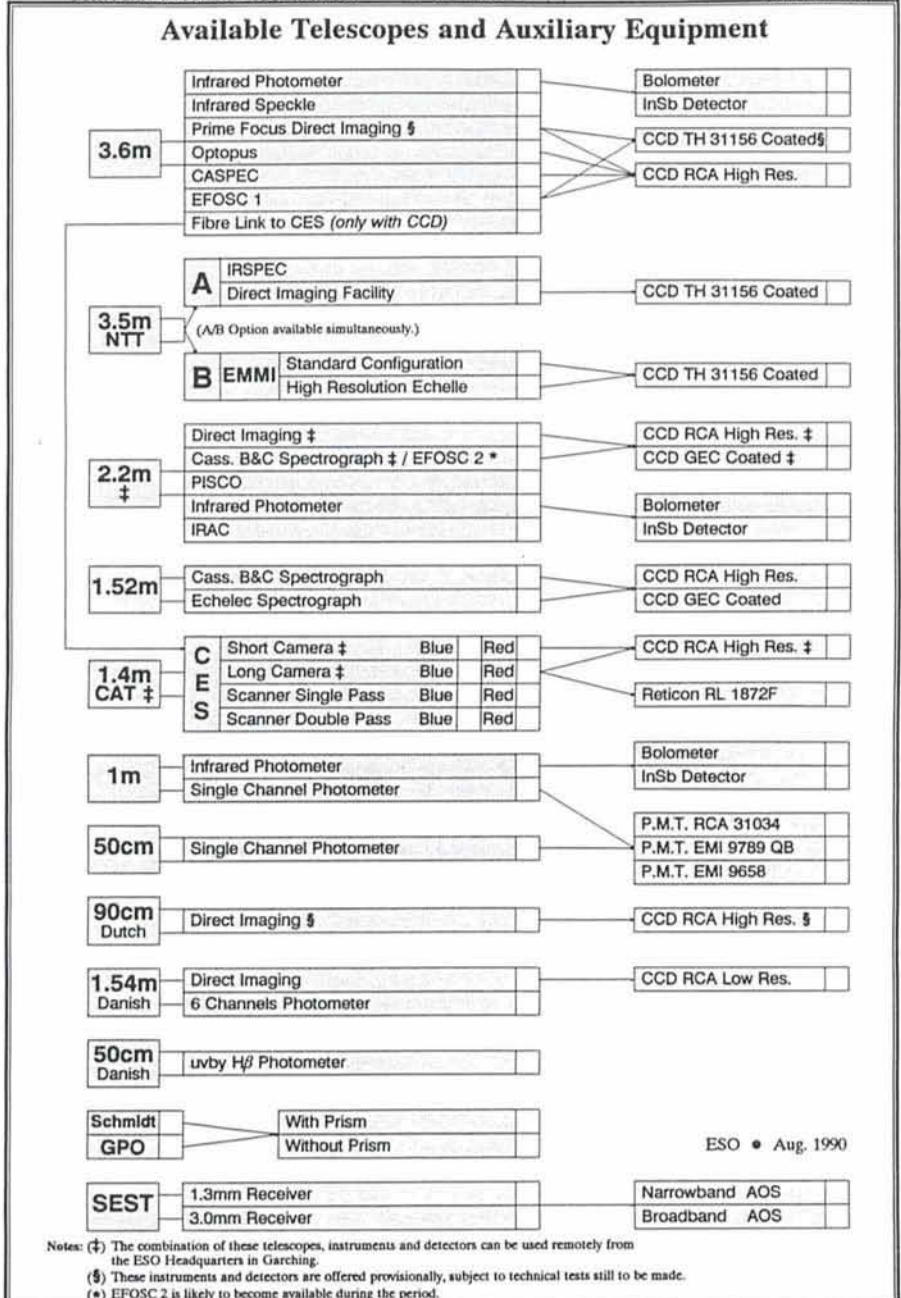
An informal round-table discussion took place at La Silla on this subject in mid-August 1991. E. Cappellaro, B. Fort, P. Véron and myself were invited to discuss with the Director General, D. Hofstad and J. Melnick the fundamentals of these apprehensions. If negative or positive changes were noted in the last three, four years, since the VLT decision, what are the major concerns and how can the community safeguard La Silla?

The discussion started with an analysis of the present situation on the mountain, trying to single out its weak points on the basis of the outcome of the Users Committee Meeting held last May. A general consensus expressed concern about the present status of detectors, both optical and infrared, some of which appear to be out of date. The causes of this relatively negative situation were ascribed to the rather large number of CCDs now in operation at La Silla, probably more than at any other observatory in the world, and into the difficulty, at least till a few years ago, of getting modern IR detectors, due to export licence problems. The Director General, responding to a somewhat pessimistic view of P. Véron and B. Fort about the rate of improvement, promised that major efforts will be spent at the ESO Headquarters to replace as fast as possible the bad detectors; in the IR in particular, a Rockwell 256x256 array

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### Available Telescopes and Auxiliary Equipment



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