

FU Ori accretion disk) is located Southeast (P.A. 120°) of the infrared companion, which remains a somewhat mysterious, probably protostellar object having a higher bolometric luminosity. However, the binary system alone cannot account for the large far-infrared flux originating from the Z CMa region, a fact which leads Koresko et al. to speculate about the existence of a cool, extended structure surrounding the binary. The observations reported here reveal this condensation, and demonstrate that it is elongated in the direction perpendicular to the jet.

These observations use COME-ON at the Cassegrain focus of the ESO 3.6-m telescope, the adaptive optics VLT prototype described by Rigaut et al. (1991 a+b; *Astron. Astrophys.*, in press, and are part of its continued scientific use (Eta Carinae: *The Messenger* 63; Ceres: *The Messenger* 65). The imaging camera is a 32×32 InSb array with a 0.108" pixel size on the sky. Standard image processing is applied and then followed by image reconstruction using a classical deconvolution algorithm from the complex visibilities. The deconvolved image at  $L' = 3.87 \mu\text{m}$  is shown in Figure 1 together with the various components needed to get a reasonable fit of the visibilities (using  $\chi^2$  minimization techniques). We find that the most probable model of this complex object is indeed a binary system surrounded by an extended, flattened structure. The positions of the optical and infrared binary components were assumed to be those found in speckle work, and the geometric properties of the extended structure were considered as free parameters in order to fit the observed complex visibilities. The centre of the disk-like structure is taken at the optical barycentre of the binary at  $L'$ . The inferred diameter of the disk-like structure is  $0.4 \pm 0.06''$ . It is oriented at P.A.  $153 \pm 8^\circ$ , whereas the outflow direction is at P.A.  $\approx 60^\circ$  (dashed-dotted line in the insert of Figure 1). We therefore suspect that the observed disk-like structure, which remains unresolved in the direction parallel to the jet, is in fact a large-scale disk, perpendicular to the outflow axis and surrounding both components of Z CMa. It is likely that this large-scale disk fuels the FU Orionis accretion disk that surrounds the visible component and provides a density gradient in the flow direction that helps to collimate the jet. In order to get the best possible fit to the visibilities, the presence of yet another component must be assumed, to account for the relative maximum of intensity seen on the diffraction ring at P.A.  $70^\circ$  (see insert of Figure 1). The brightness of this third component is

**CNRS – Observatoire de Haute-Provence and European Southern Observatory**

## **3rd ESO/OHP Summer School in Astrophysical Observations**

**Observatoire de Haute-Provence, France,  
July 15–25, 1992**

With modern observatories being moved to ever more remote sites, fewer and fewer European students have ready access to up-to-date observing facilities. As one step towards balancing this obvious shortcoming in the training of young European astronomers, the ESO/OHP Summer School offers the opportunity to gain practical experience under realistic conditions.

In groups of three students, each guided by an experienced observer, the participants will prepare a small observing programme to be carried out with telescopes of 1.2–1.9 m aperture (direct imaging and spectroscopy) at OHP. The data reduction will be done with MIDAS, on-line also with IHAP. In a micro workshop at the end of the school each group will present their results, including additional pertinent information from the literature, to the other participants.

The preparation of the practical work will be supplemented by a series of 90-minute lectures which will be given by invited specialists. The subjects foreseen include (a) modern telescope layout, (b) charge-coupled devices, (c) design principles of high-throughput optical instruments, (d) crowded-field photometry, (e) high-resolution spectroscopy, (f) low-resolution and slitless spectroscopy, (g) astronomical infrared technology, and (h) data-reduction strategies. As a scientific highlight, a talk on a cosmological subject is foreseen. The working language at the summer school will be English. (Reports on the two previous ESO/OHP Summer Schools appeared in *The Messenger*: see No. 53, p. 11 and No. 61, p. 8.)

Applications are invited from graduate students working on an astronomical Ph.D. thesis at an institute in one of the ESO member countries. Application forms can be obtained from the organizers. The deadline by which applications must have been received is March 31, 1992. A letter of recommendation by a senior scientist who is familiar with the applicant's work will be required at the same time. Up to eighteen participants will be selected and have their travel and living expenses fully covered by ESO and OHP.

### **The Organizers:**

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much lower than that of either binary members; if confirmed by further work, this may represent either an emission knot in the jet or a stellar object.

This new result reveals the power of the adaptive optics technique to explore the close surroundings of young stellar

objects. They appear more complex than anticipated, as demonstrated by this first direct image of a disk-like structure surrounding a binary (100 A.U.). Further instrumental developments are under way, including the use of coronographic techniques.

### **RECTIFICATION**

**The VLT Adaptive Optics Programme** (*The Messenger* No. 65, p. 13)

The true value of the inclination of the projected rotation axis of Ceres with respect to the normal to the ecliptic plane is  $4 \pm 6^\circ$  and not 20 to 30 as erroneously given in Figure 1.

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