

OBSERVATION OF MULTIPLE STARS WITH THE DIGITAL SPECKLE INTERFEROMETER.

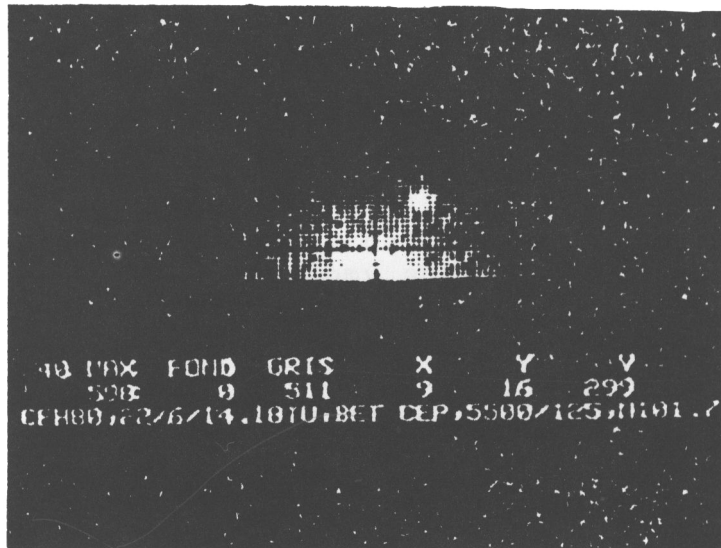
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Abstract

Since 1977, the Digital Speckle Interferometer chiefly developed for the study of atmospheric structure in cool supergiant stars, has been used for observing multiple stars. It has provided binary star resolution down to 30 milliarcsec. separation with a precision from 3% to 10%. The uncertainty on position angle determination ranges from + 1° to + 5°. Working in photon counting mode, we are able to estimate magnitude difference reaching  $\Delta m \sim 3.0$  with an uncertainty of about 0.2-0.3 magnitude. On the basis of present experimentation, we think that 17th mag binaries can be resolved with a 3.6 meter telescope.

The Digital Speckle Interferometer developed by our group, is extensively described in Blazit et al (1977, 1976).



The Digital autocorrelation function of a binary star.

$\beta$  Cep

3.60 meter C.F.H. telescope

1 pixel = 9.8 milliarcsec.

1980.4743 ,  $\theta = 51.5 \pm 1.5^\circ$   $\rho = 0.180 \pm 0.009$  "

$\lambda$  5500 Å  $\Delta \lambda$  125 Å  $\Delta m = 3.0 \pm 0.2$

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