

SPECKLE INTERFEROMETRY OF DOUBLE STARS FROM THE SOUTHERN HEMISPHERE

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We have started a new program of double star observations in the southern hemisphere which utilizes the technique of speckle interferometry. Observations are made using the Stanford University speckle interferometer on the 76-cm reflector at the Cesco Observatory at El Leoncito, Argentina (jointly run by Universidad Nacional de San Juan and Yale Southern Observatory), although we will also have access to larger aperture telescopes. The Stanford system, formerly used at Lick Observatory, is on long term loan to us from Dr. Gethyn Timothy and features a multi-anode microchannel array (MAMA) detector as the imaging device. This new program of double star research will help alleviate the continuing problem of fewer speckle observations in the southern hemisphere. In combination with other data such as the eyepiece interferometer measures of Finsen and Hipparcos parallaxes, it should also eventually contribute to a better understanding of the lower portion of the main sequence mass-luminosity relation.

In 1994 July, we installed the instrumentation at the Cesco Observatory 76-cm telescope and observed 66 double stars. Preliminary results from these data indicate that we can produce speckle image reconstructions with nearly diffraction-limited resolution. In the near future, we will have observing time both at the 76-cm telescope and the 2.15-m CASLEO telescope which is also located at El Leoncito.