most dependable.

Recent occultation observations indicate that a limb-brightening assumption may be more appropriate in some cases. If in these cases a limb-darkening assumption was made in applying the model-fitting technique, an erroneously large diameter would be inferred. It is suggested that both the deconvolution and the model-fitting technique be applied in the reduction of occultation observations. A preliminary fit will produce the scale of the occultation. Deconvolution would then provide an indication of the brightness distribution, i.e., limb darkening, limb brightening, close duplicity, or an irregular distribution. Finally, the angular diameter would be determined using the deconvolved brightness distribution in the model fitting.

15.03 The Angular Diameter of α Leo by Lunar Occultation, D. C. WELLS, G. JACOBY, R. R. JOYCE and S. T. RIDGWAY, KPNO. The daytime occultation of 17 June 1980 was observed at 1.6 μm with the Mayall 4 m telescope. A rectangular pupil mask was selected to enhance the fringe contrast in the diffraction pattern. The preliminary result for the limb-darkened diameter is 1.21 ± 0.09 arcsec, in good agreement with the intensity interferometer result. Implications for the occultation method of angular diameter measurement will be discussed.

15.04 The Angular Diameter of Regulus, R. RADICK, APOF/PHS. Only three of the 32 stars resolved by the Narrabri intensity interferometer are occulted by the moon, and only one of these, Regulus (α Leonis), is likely to be resolved by means of occultation measurement. On 28 March 1980 an occultation of this star was observed in two colors from Cerro Tololo Inter-American Observatory. The best-fit uniform disk angular diameters (in milliarcseconds) derived from these data are:

\[ 1.40 \pm 0.12 \text{ (yellow channel, } \lambda = 5786\text{Å), and } 1.52 \pm 0.11 \text{ (blue channel, } \lambda = 4356\text{Å).} \]

These measurements are in reasonable agreement with the value of

\[ 1.32 \pm 0.06 \text{ (} \lambda = 4382\text{Å)} \]

obtained for the uniform disk through intensity interferometry.

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15.05 A Search for Linear Polarization in OH Masers Surrounding Late-Type Stars, M. J. CLAUSEN and J. D. FIX, UC. Using the 300 m telescope of the Arecibo Observatory, we have looked for linear polarization in the 18 cm main-line OH maser emission from the circumstellar material surrounding the long-period stars UX Cyg, WX Psc, IK Tau, R Leo, R LMi, U Ori, S CrB, and U Her as well as the enigmatic FB supergiant IRC +10420. The observations are discussed in light of current theories of the production and propagation of linearly polarized maser radiation in circumstellar envelopes. The Arecibo Observatory is operated by Cornell University under contract with the National Science Foundation.

15.06 Determination of Physical Parameters of the Envelopes around T Tauri Stars, R. Calvet and G. Basri, UC. We have presented in previous work chromospheric models for T Tauri stars which generally predicted a total flux in Hα too small compared with observations. We advanced the hypothesis that the excess Hα flux is due to emission from an envelope surrounding the star. In the present work, we show that the radiation temperature corresponding to the Hα peak flux for a number of T Tauri stars has an upper limit of ~10,000K, agreeing with predictions of our models. We assume then that the emission in Hα and higher series lines is produced in a chromosphere adequately described by our models, and use the latter to predict the expected chromospheric contribution to the flux in Hα for a number of stars and, by comparison with observations, to estimate the envelope contribution. Physical parameters for the envelope are determined and compared to previous estimates.

15.07 Some Preliminary Dust Shell Models for T Tauri Stars A. E. RYDBERGEN and C. M. LEUNG, R.P.I. and F. J. VRBA, D.S.H.O. The Leung (1975, Ap.J. 199, 340) radiative transfer code is being used to calculate self-consistent models for circumstellar dust shells around T Tauri stars. Our preliminary models assume dirty silicate grains of a single size and an inverse-square grain density distribution appropriate for a constant-velocity stellar wind. The observed limits on circumstellar reddening in T Tauri stars suggest a characteristic grain radius on the order of 0.5 μm. With the inner boundary temperature and optical thickness of the dust shell as free parameters, we are able to successfully model the spectral energy distributions of T Tauri stars such as DX Tau at wavelengths shortward of about 5 μm. In at least some stars, there appears to be more cool dust than predicted by a simple inverse-square density distribution. This work is being supported in part by a grant to AER from the Research Corporation.

15.08 Infrared Observations of Supergiants in M31 and M33, R.M. Humphreys, U. of Minn., B. Jones, UCSD, G. Neugebauer, CIT, and K. Matthews, CIT. Infrared 1.2, 1.6, and 2.2 μm observations and visual photometry are discussed for the blue irregular Bubble-Sandage variables in M31 and M33 and the four brightest M supergiants in M33. The H-S variables are a group of very luminous, massive stars similar to η Car and S Dor. The infrared data are used to derive the total luminosities of these peculiar