ized standard stars from Schmidt, Elston, & Lupie (1992).

Data were reduced using IRAF tasks. Observations of nearby blank sky were obtained at different prism orientations using the same on-chip exposures times as for the on-source observation. Dark-current frames were not taken because of the low noise of the detector. Flat fields were taken at the four positions of the polarizer and for all the filters at dusk and dawn. Bias frames were also taken at the middle of the night. For each filter and prism position, bias frames were subtracted from the flat field images; the flat field images corrected for bias were combined to form an average flat field for each filter and prism position. The bias frame was also subtracted from each object image and the resulting frames were multiplied by the mean value of the combined bias-corrected flats. Finally, the object image was divided by the combined flat field.

The flux of the object may be determined from two orthogonal measurements $f_1 = f(0^\circ) + f(90^\circ)$ and $f_2 = f(45^\circ) + f(135^\circ)$ where $f(\theta)$ is the flux of the object at image taken at polarizer position θ. The instrumental flux is the average of these two fluxes, from which instrumental magnitudes for each object were obtained. A number of photometric standard stars were observed to determine the photometric zero points. The conversion to standard magnitudes was made using the standard photometric stars from Landolt (1992).

We calculated the normalized Stokes parameters q and u for each object as

$$q = \frac{f(0^\circ) - f(90^\circ)}{f(0^\circ) + f(90^\circ)}\,, \tag{1}$$

and

$$u = \frac{f(45^\circ) - f(135^\circ)}{f(45^\circ) + f(135^\circ)}\,. \tag{2}$$

The q and u parameters are related to the fractional polarization p and the position angle of polarization θ by

$$p = \sqrt{q^2 + u^2}\,, \tag{3}$$

and

$$\theta = \frac{1}{2}\arctan\left(\frac{u}{q}\right)\,. \tag{4}$$

By defining the fractional polarization in this way, we are assuming that the circular polarization is negligible.

2.1. *Error calculations*

The uncertainty of the flux measurement of the star is given by

$$\sigma_f = \sqrt{f_{\rm star} + 2f_{\rm sky}}\,, \tag{5}$$

where $f_{\rm star}$ and $f_{\rm sky}$ are the fluxes from the star and sky from the same image, respectively.

From equations (1) and (2), we use Gaussian propagation to obtain the errors for u and q

$$\sigma_u = \sqrt{\left[\frac{2f_{135}}{(f_{45}+f_{135})^2}\sigma_{f_{45}}\right]^2 + \left[\frac{2f_{45}}{(f_{45}+f_{135})^2}\sigma_{f_{135}}\right]^2}\,, \tag{6}$$

and

$$\sigma_q = \sqrt{\left[\frac{2f_{90}}{(f_0+f_{90})^2}\sigma_{f_0}\right]^2 + \left[\frac{2f_0}{(f_0+f_{90})^2}\sigma_{f_{90}}\right]^2}\,, \tag{7}$$

where σ_f is the error in the flux and f_x is the flux at orientation x of the polarization analyzer.

Similarly, the errors in the polarization degree, ϵ_P, and polarization position angle, ϵ_θ, follow from equations (3) and (4). Using Gaussian propagation we get

$$\epsilon_P = \sqrt{\sigma_u^2 + \sigma_q^2}\,, \tag{8}$$

and

$$\epsilon_\theta = \frac{1}{2p}\sqrt{(q\sigma_u)^2 + (u\sigma_q)^2}\,, \tag{9}$$

where σ_u y σ_q are given by equations (6) and (7), respectively, and p is the measured polarization.

3. RESULTS AND ANALYSIS

The observed polarization values are shown in Table 2. For each object, this table shows: the Julian date; linear polarization, p; position angle, θ, and errors of the measurements of p and θ (ϵ_p and ϵ_θ, respectively). Except for V Hya, all the stars were observed on more than one night.

For each star two total fluxes, f_1 and f_2, can be derived from the measurements from a couple of object images separated by 90 degrees of the polarizer prism: $f_1 = f(0^\circ) + f(90^\circ)$ and $f_2 = f(45^\circ) + f(135^\circ)$. The difference between these two fluxes expressed in percent, Dif(%), is also shown in Table 2. A low value of Dif(%) indicates sky stability during the observations assuming that star flux does not change during the observing time.

The values of p and θ as a function of wavelength are plotted from Figures 1 to 8 for each object. The polarization measurements in the U band, in general, have large errors because of the low photon flux in this band. The results of polarization measurements for each object are described in the following sections, and comparisons with previously published results are made whenever possible. A summary of these comparisons is presented in Table 3.