تفاصيل البحث:

عنوان البحث :	*DIURNAL-VARIATION OF THE LINEAR-POLARIZATION ACROSS THE H-BETA FRAUNHOFER LINE OF THE TERRESTRIAL ATMOSPHERE .1.* *DIURNAL-VARIATION OF THE LINEAR-POLARIZATION ACROSS THE H-BETA FRAUNHOFER LINE OF THE TERRESTRIAL ATMOSPHERE .1.*

الوصف : When spectra of the daytime sky are compared with those directly from the Sun, it is found that the depths of the Fraunhofer lines are reduced. This indicates the presence of an added light, the Ring effect. Most previous research on the Ring effect has been performed spectroscopically, with the notion that the added component is always unpolarized. Here we presented spectropolarimetric observations using the principle of the line depth method (compression between the line centre and its continuum) to investigate this effect. The general scattered light of the blue sky is polarized and as the additional component may or may not also be polarized, the filling-in effect should be detectable by performing spectropolarimetry, which indeed has been achieved. The observations have involved the use of high precision polarimetry with spectral resolution almost-equal-to 2 angstrom at the H-beta Fraunhofer spectral line. The data indicate a variation of the linear polarization in the H-beta-line centre as a function of the solar zenith angle. One possible advantage of the polarimetric technique is that the Ring effect detections can be made without recourse to solar measurements directly or indirectly using an attenuator. Finally, a model without knowledge of the filling-in mechanism, has yielded a good qualitative agreement with the observational behaviours and it can be taken as a first step to explain the variation of the linear polarization across the spectral line.

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