

MPAE-W-00-76-29

CONTRIBUTIONS TO THE 5TH INTERNATIONAL SYMPOSIUM  
ON EQUATORIAL AERONOMY

J. Röttger and R.F. Woodman



F-Region Electric Fields: Observational Aspects

(invited Review Paper)

R.F. Woodman\* and C. Calderon<sup>†</sup>

\*Max-Planck-Institut für Aeronomie, D-3411 Katlenburg-Lindau 3, F.R.G.

<sup>†</sup>Radio Observatorio de Jicamarca, Instituto Geofisico del Peru, Lima

Abstract

Equatorial electric field measurements were recently reviewed by B. Balsley on occasion of the last equatorial symposium. We present in this review new measurements reported in the literature since the last symposium and include a large amount of new unpublished measurements of the vertical and East-West electric fields performed at Jicamarca using the incoherent scatter technique. The data base at Jicamarca comprises now almost a full solar cycle. The effects of low solar activity are discussed. The main effects being: (1) A reduction in the night-time maximum amplitude of the E-W drift; (2) an increase in the frequency of occurrence of afternoon reversals of the vertical drift (E-W electric field); (3) a reduction in the amplitude and frequency of occurrence in the prereversal (post-sunset) vertical drift enhancement.

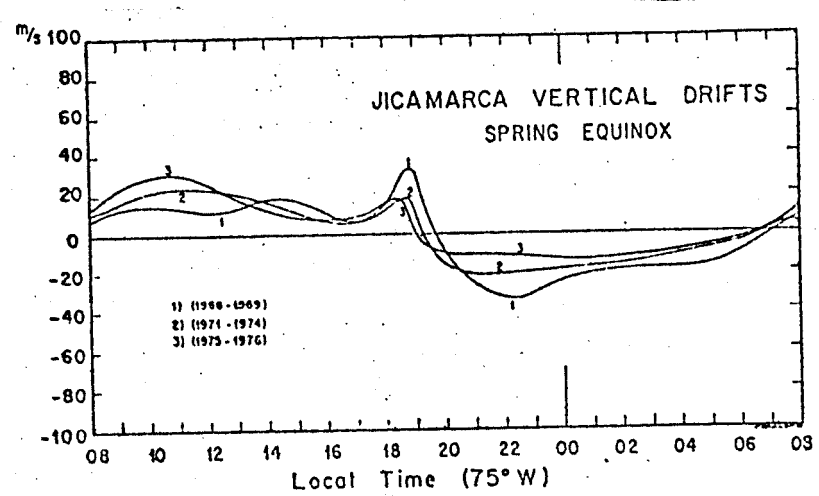
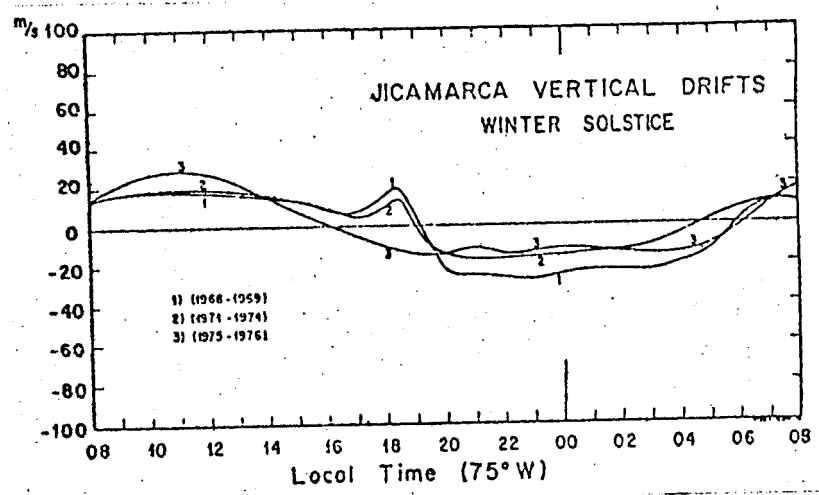
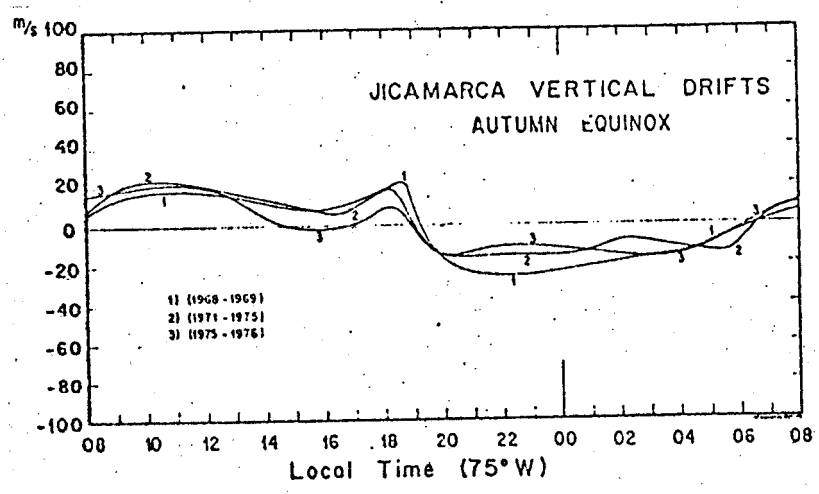
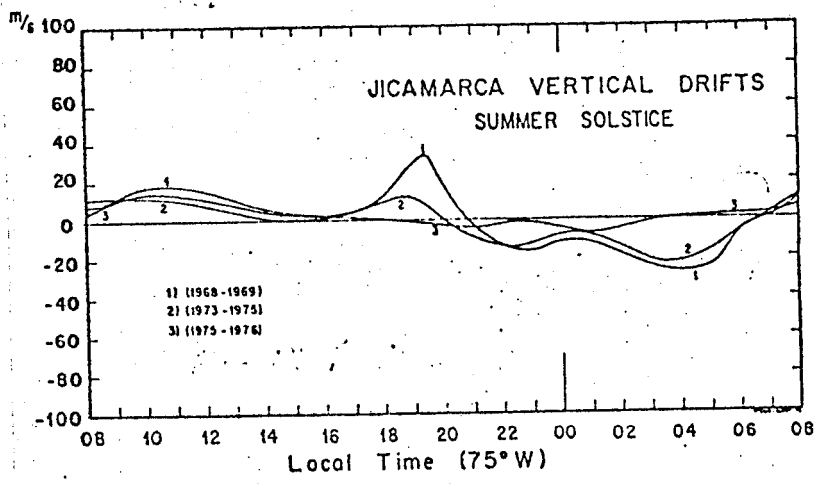


Fig. 1

F-region vertical drift averages (E-W electric field) taken at Jicamarca, Peru ( $1^\circ$  dip) by an incoherent scatter technique. Seasons and time periods of the current solar cycle are indicated in the figures.

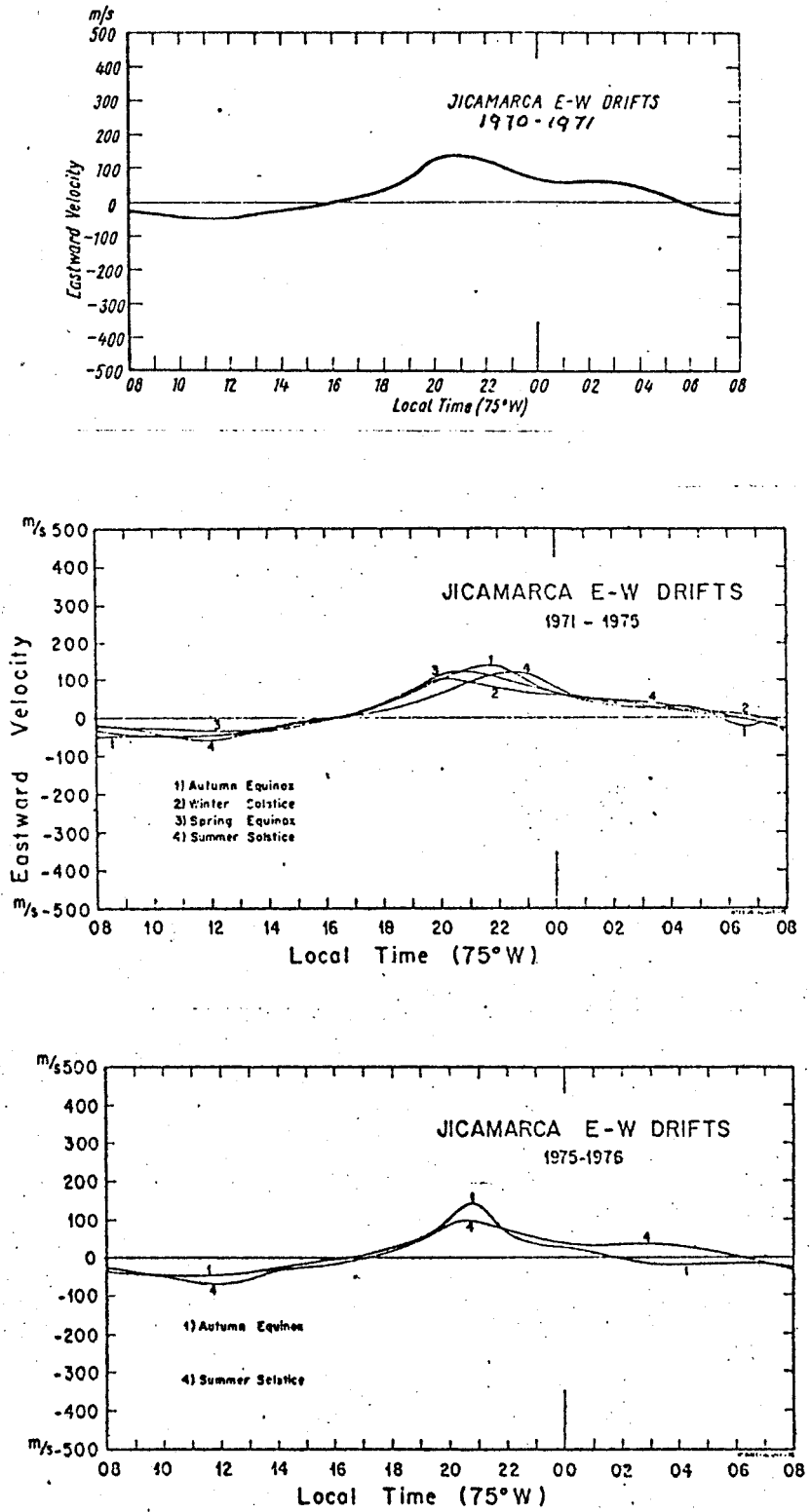


Fig. 2

Same as Figure 1, but for East-West drifts (vertical electric field).