

First UV Intercomparison of UV spectrometers in El Arenosillo (Huelva) from 1st to 10th September 1999.

I. Overview

Arrival in Mazagón the 31st August 1999.

The following day, setting up of the WMO travelling standard Brewer #17 in El Arenosillo and begin of simultaneous ozone measurements with Brewers #33, #70, #117 and #157. Brewer #151 arrived on Thursday and started ozone measurements only on Friday, 4th September.

II. Measurement schedule.

On Friday and Saturday intensive Ozone and UV measurements were performed the whole day, from sunrise to sunset, to obtain representative data for a large range of airmasses. In addition, sun scan tests were performed to define the optimal ozone measurement position. Even though moving clouds in the morning of Saturday perturbed slightly the measurements, a large set of simultaneous ozone measurements could be obtained.

Starting Monday 6th of September, Mercury, Cadmium and Zinc spectral discharge lamps were used on all five Brewers to characterize their wavelength alignment.

III. Results

The ozone measurements of all five Brewers were in good agreement with travelling standard Brewer#17, with maximal deviations before any adjustments of less than 10 DU.

The optimal ozone measuring positions (calibration step) of all five Brewers were in agreement with the results from the sun scans and no changes were necessary. This result also implied that the ozone absorption coefficient used by the Brewers was still correct.

Slight changes to the extraterrestrial constants based on the standard lamp results obtained since the last calibration visit was implemented. A new analysis of the data obtained during Friday and Saturday 3 and 4th September produced agreements to within $\pm 1\%$ which is the certified accuracy of Brewer spectrophotometers.

The spectral lamp measurements confirmed the correct wavelength alignment found with the sun scan tests and no adjustments to the dispersion constants were necessary.

IV. Maintenance

The grating block from Brewer #33 was found to be slightly misaligned after it was refitted last year by the owner and needed some readjustment. Apart from that, all five Brewers were found to be in good operating shape and needed no special maintenance.

V. Conclusions.

After slight adjustments to Brewers #33, #70, #117, #151 and #157, ozone measurements were within $\pm 1\%$ of the WMO travelling standard Brewer #17. The instruments needed no special maintenance in part due to previous visits by IOS.