

ONE DIMENSIONAL HIGH TIME RESOLUTION OBSERVATIONS WITH THE WESTERBORK ARRAY

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The Westerbork array has recently been adapted and procedures have been developed to observe the sun at cm wavelengths with high time resolution. One dimensional scans are obtained in both circular polarizations every .1 sec.

At 6 cm, the 3 km configuration will have a smallest fringe of about 4" width and a few degrees phase accuracy in this fringe. The main fringe is a few minutes of arc, depending on the choice of the shortest spacings.

A typical example of the beam is shown in fig. 1, where 39 of the 40 interferometers are present.

From 19 - 21 June 1979 the first observations have been made with success.

A very small  $\mu$ -wave burst has been observed on June 19 and this high time resolution data is now investigated at Utrecht Observatory.

An uncalibrated preliminary display of three scans during this burst is presented in figures 2-4 in time order.

The background, interpolated between the start and end of the burst is subtracted and each figure is an integration over .4 sec to eliminate noise.

In the rising and falling part of the burst (figures 2 and 4) some evidence of structure appears to be present in the form of double peaks. Around the maximum of the burst (fig. 3) the peaks apparently have merged. The instrument will participate in the FBS and SERF action periods of SMY and high time resolution measurements will be made in close cooperation with the HXIS experiment on board the SMM satellite.

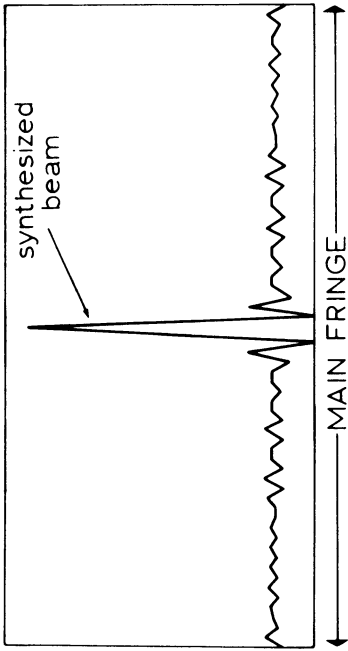


Figure 1. - Typical WSRT beam pattern.

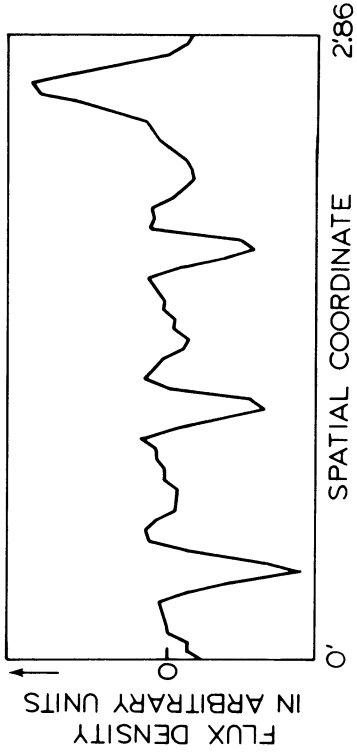


Figure 3. - Scan at the peak of a  $\mu$ -wave burst.

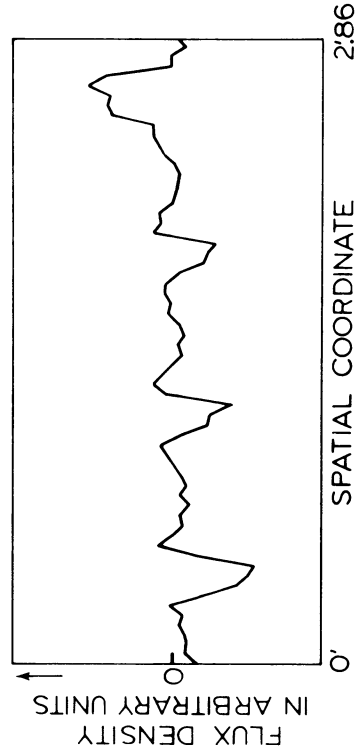


Figure 2. - Scan at the onset of a  $\mu$ -wave burst.

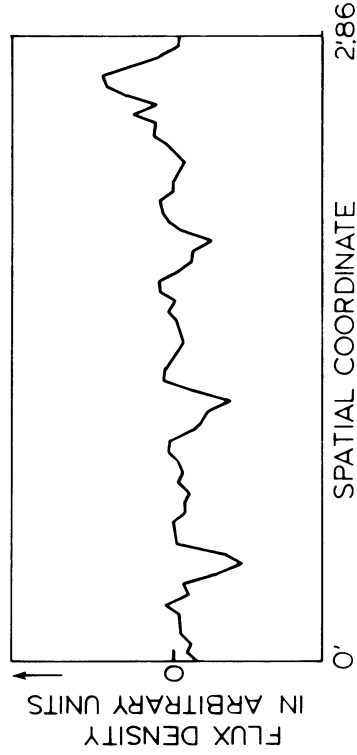


Figure 4. - Scan in the decay of a  $\mu$ -wave burst.