

THE 400 MC./S. FLUX FROM CASSIOPEIA A

Ch. L. SEEGER

University Observatory, Leiden, Netherlands

The first trial of equipment designed for 400 Mc./s. absolute flux density measurement was completed just prior to this symposium. Using the midday sun, the gain of a 7.5 metre Würzburg (equipped with a TE_{11}° circular wave-guide feed) was found by comparison with an 'optimum' pyramidal horn of 20.2 square wave-lengths aperture. Cable losses and signal powers were measured against the available noise power from two co-axial resistors, one at ambient temperature and the other stabilized at the boiling-point of pure nitrogen.

Using the horn and the Würzburg in a 20 wave-length, total-power interferometer, the flux density from Cassiopeia A was found to be 56×10^{-24} w.m.⁻² (c./s.)⁻¹. * Because of the small amount of observational material, it is difficult to state a mean error for this determination. However, $\pm 15\%$ expresses the observer's personal impression of the reliability. Also, the brief experience with this equipment showed that with refined practice one might expect to reach an accuracy (for Cassiopeia A) of perhaps 2 or 3 %, i.e. to the uncertainty in the calculated effective area of the horn [1]. Details of this investigation have since been published [2].

REFERENCES

- [1] Jakes, W. C. Jr. *Proc. I.R.E.* **39**, 160, 1951.
[2] Seeger, Ch. L. *B.A.N.* **13**, 100, no. 472, 1956.

* The preliminary value reported at the Symposium was 32×10^{-24} .