

## EVN PHASE-REFERENCED OBSERVATIONS OF 1308+328

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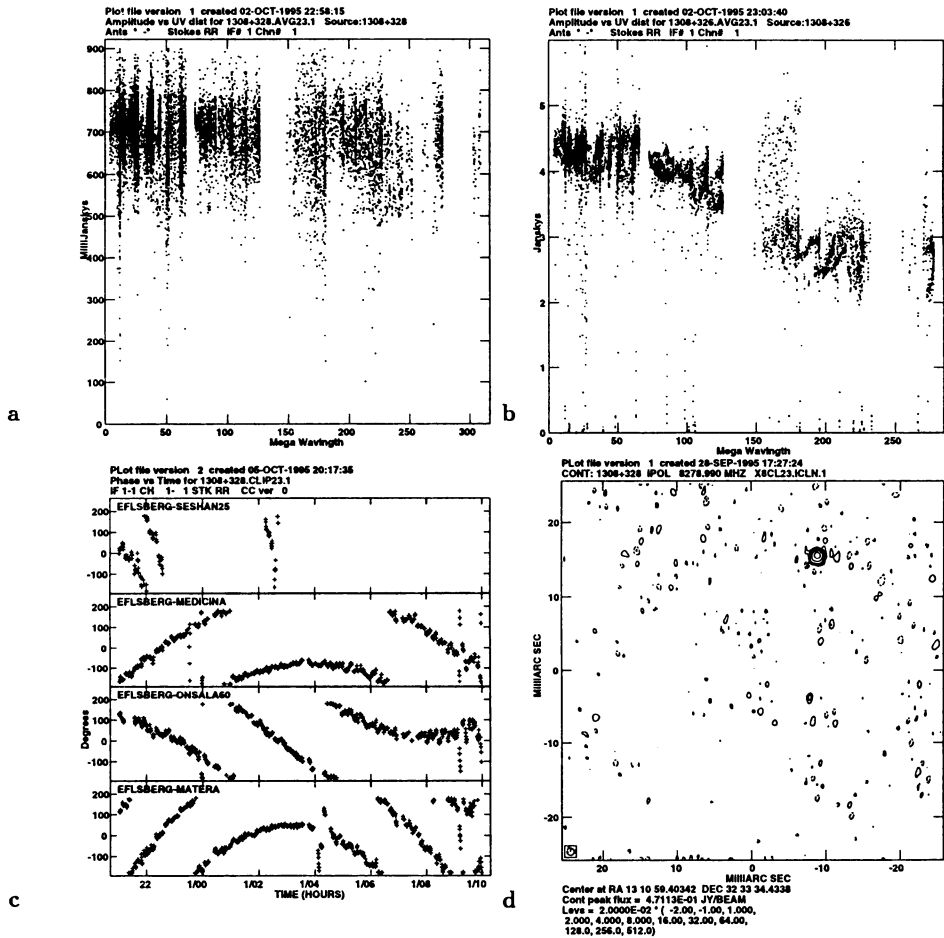
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Machalski and Engels (1994) have drawn attention to the recent outburst in the extragalactic radio source 1308+328. We observed it with VLBI at 2.3 and 8.4 GHz in February 1995, using the EVN, and including antennas at Seshan, Kashima, Hartebeesthoek and Ny-Alesund, all of which provided long baselines. During these observations we switched every few minutes between 1308+328 and the nearby compact source 1308+326, 14 arcmin away. This allowed us to determine a precise relative separation between these sources at both frequencies using phase referencing techniques, and provided a useful comparison between source sizes. We found that the target source, 1308+328, is considerably more compact than the reference source 1308+326, the latter being resolved (correlated flux decreased by 50 %) at 8.4 GHz at 250 million wavelengths. In contrast, 1308+328 appears completely unresolved at this resolution (Fig 1), corresponding to a source size  $< 0.5$  mas.

We have used both AIPS and VLBI3 software to make an astrometric analysis. In AIPS we subtract the interpolated residual phase solution of 1308+326 from that of 1308+328 and estimate the angular separation from the phase-referenced map of 1308+328 (Fig.1) In VLBI3 we use a full theoretical geophysical and relativistic model and a least squares fit to the total visibility phases of both sources. A preliminary estimate of the angular separation from VLBI3, using group delays alone, is given below.

$\Delta\alpha = 30.7389 \text{ s} \pm 0.0005 \text{ s}$ , and  $\Delta\delta = 12.84444' \pm 0.00002'$   
The values derived from AIPS and VLBI3 are in agreement.



**Figure 1.** Results from EVN observations at 8.4 GHz: (a) Visibility amplitude vs. uv distance for 1308+328; (b) the same for 1308+326; (c) visibility phase of 1308+328 relative to 1308+326; (d) phase-referenced map of 1308+328

## References

Machalski, J. and Engels, D., 1994, *MNRAS*, **266**, L69