

AN OUTBURST OF OJ 287

Sen KIKUCHI and Makoto INOUE*

Tokyo Astronomical Observatory, Mitaka, Tokyo 181, Japan
*Nobeyama Radio Observatory, Nobeyama, Minamisaku, Nagano 384-13, Japan

ABSTRACT: Optical and radio behaviours of OJ 287 in the recent outburst are presented. The light curve is similar to that in the previous outburst in 1970-1971, although the maximum brightness is about 1 mag fainter. The intraday variations are found in both optical and radio regions. We find no periodicity of time scales less than 0.2 days.

We have been made optical photometry and polarimetry of OJ 287 mainly with the multichannel polarimeter attached to the 91cm reflector at the Dodaira Station of the Tokyo Astronomical Observatory since 1973, and in December 1982, we began to measure flux density at 10 GHz with the 45m radio telescope of the Nobeyama Radio Observatory. On January 10, 1983, the brightness in V was observed as 12.92 mag by Haarala et al. (1983). Combining the results on December 27, we find that the abrupt increase of the brightness during two weeks has amounted to 1.1 mag, which is comparable to that in the previous outburst in 1970-71. Then the brightness has been fluctuating with a trend of becoming fainter.

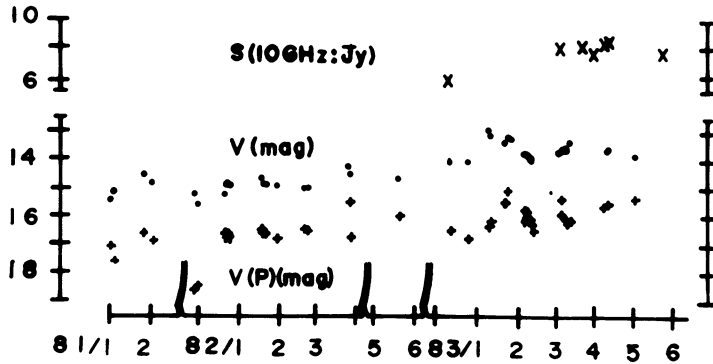


Figure 1. Long-term variations of OJ 287. V(P) denotes the polarized flux in V region in unit of magnitude.

The light curves in the both active phases are similar although the maximum brightness in the present outburst is about 1 mag fainter than that in the outburst in 1970-71. As shown in Figure 1, OJ 287 has been undergone an outburst also in the radio region. The optical polarization was not so weak as in the previous one except during the period of light maximum. On the contrary to the case in the previous outburst, the position angles varied around the direction preferred in the basic and declining phases (Kikuchi et al. 1976, and Hagen-Thorn 1980).

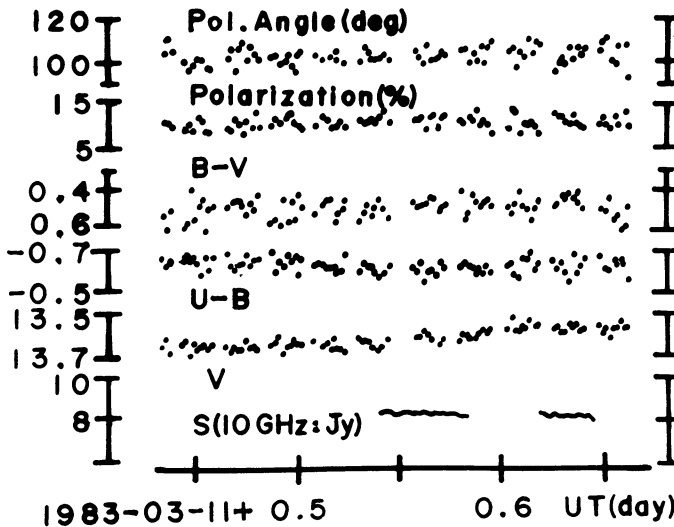


Figure 2. Intraday variations of OJ 287 on March 11, 1983.

The rapid changes of the brightness during a night were found several times. The largest variation was found on March 11, and the variations of observed V, colors and polarization properties are displayed in Figure 2 with those of flux density at 10 GHz. In the radio region, the rapid variation within a day is also confirmed and on March 9 the flux density at 10 GHz changed by 4% during 3 hours. Although Vaitaoja et al. (1983) suggested a 15.7 min periodicity in the optical and radio variations, we found no significant periodicity of time scales less than 0.2 days.

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