

A NEUTRAL HYDROGEN CLOUD IN THE VICINITY OF THE ELLIPTICAL GALAXY  
NGC 4318

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## 1. OPTICAL PROPERTIES

NGC 4318, in the Virgo Cluster, has the following optical properties:

- morphological type: E (Nilson, 1973)
- $B_T^0$  magnitude : 13.8 (Nilson, 1973)
- photometric axis : 0.8' x 0.6' (Nilson, 1973)
- heliocentric radial velocity:
  - 300 km s<sup>-1</sup> (Arakelian et al., 1975)
  - 1247<sub>-15</sub> km s<sup>-1</sup> (Tonry, 1981)
  - 1215<sub>-</sub> km s<sup>-1</sup> (Huchra et al., 1983)

## 2. HI OBSERVATIONS

Lake and Schommer, with the Arecibo radio telescope (half-power beam width: 3;3' x 3.3') have detected an HI line with an intensity of 2.5 mJy. With the Nançay radio telescope (half-power beam width: 2' x 22'), we have detected a signal of 30 mJy. The two line profiles are centered at the same heliocentric radial velocity of 1383 km s<sup>-1</sup>.

The discrepant results concerning the intensity of the line indicate that the HI distribution is extended. We have thus discussed the environment of NGC 4318 in relation with possible confusion with a large nearby galaxy due to sidelobes or tidal interaction and performed further observations at various positions.

They lead to the discovery of an extended HI cloud, related to the dwarf galaxy Ames 802 (also n° 566 in Bingelli et al., 1985), with the following properties:

- total HI mass :  $2 \times 10^8$  solar masses
- center : 2'W and 5 - 10'N of NGC 4318<sub>-1</sub>
- mean radial velocity : 1383 <sub>+5</sub> km s<sup>-1</sup>
- projected distance from NGC 4318 : 40 kpc
- relative radial velocity : 168 km s<sup>-1</sup>
- velocity gradient : 17 km s<sup>-1</sup>

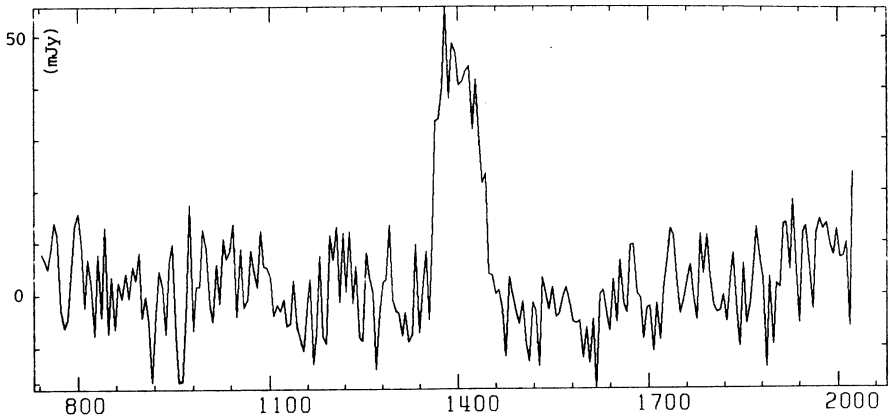


Figure 1. Average (linear H and V polarizations) HI profile of Ames 802, with a velocity resolution of  $5.3 \text{ km s}^{-1}$  (without removal of the instrumental baseline). Radial velocities are given in terms of heliocentric optical redshift.

## REFERENCES

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## NGC 2363, A GIANT EXTRAGALACTIC H II REGION

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NGC 2363 is one of the extragalactic H II regions with the highest surface brightness in  $H\alpha$  and in  $\lambda 5007$ . We discuss the physical conditions within this star-forming region. In particular, from spectrophotometric studies in the 1200–7400 Å range we have determined its chemical abundance. We find that the O/H is an order of magnitude smaller than in the solar vicinity, and that the C/O ratio is a factor of two smaller.