

FOURIER TRANSFORM SPECTRA OF THE $A^2\Pi - X^2\Sigma^+$ TRANSITION OF MgBr NEAR 380 NM

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It is well-known that the $A^2\Pi$ state of the magnesium monohalide radicals (MgX, X= F, Cl, Br, I) are predissociated. Spectroscopic results of this predissociation are available, however, only for MgF and MgCl. In this study, the high-resolution emission spectra of the gaseous magnesium bromide (MgBr) radical have been detected. The spectra of MgBr were recorded by using Bruker IFS120HR Fourier transform spectrometer, modified to record double-sided interferograms. The MgBr radical was generated in the microwave discharge of Ar buffer gas (1.5 Torr) with a trace of the vaporized MgBr₂ salt. The vapor of the MgBr₂ salt was obtained in a quartz tube heated to about 400°C with a heating tape. The (0,0) and (1,1) vibrational bands for the $A^2\Pi_{1/2} - X^2\Sigma^+$ were clearly identified near 380 nm, but only the (0,0) sub-band for the $A^2\Pi_{3/2} - X^2\Sigma^+$ was detected, probably due to a predissociation. The assignment is in progress.