Jan Bouška; A. Mrkos

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Acta Universitatis Carolinae. Mathematica et Physica, Vol. 12 (1971), No. 1, 65

Persistent URL: http://dml.cz/dmlcz/142261

1971 ACTA UNIVERSITATIS CAROLINAE MATHEMATICA ET PHYSICA VOL. 12, NO. 1

A Note on the Spectrum of Comet Kohoutek 1970 III

J. BOUŠKA and A. MRKOS
Department of Astronomy and Astrophysics, Charles University, Prague, and the Kleť Observatory

Received 30 March 1971

One spectrum of Comet Kohoutek 1970 III was obtained at the Kleť Observatory on March 31.81, 1970, ten days after the comet's perihelion passage. A small $f/3$ Maksutov camera (150/200 mm) with a 7° objective prism was used. The dispersion was about 1000 A/mm. The exposure time was 25 min. on an ORWO NP 27 film. The spectrum has been measured on the Zeiss registering microphotometer in the Department of Astronomy and Astrophysics, Prague.

During the observation the heliocentric distance of the comet was $r = 1.72$ and the geocentric $\Delta = 1.83$ AU, respectively. The brightness of the comet was about 11^m.

The spectrum is weak and underexposed. It shows first of all a very strong continuum. Further, some weak emission bands are also present. The most prominent features are CN $(0 - 0)$ $\lambda = 3883$ A, CN $(0 - 1)$ $\lambda = 4215$ A, C_2 $(\Delta v = +2)$ $\lambda = 4381$ A, C_2 $(\Delta v = +1)$ $\lambda = 4735$ A and C_2 $(\Delta v = -2)$ $\lambda = 6186$ A. Other very weak emissions are also present: the C_3 group near $\lambda = 4050$ A, one feature near $\lambda = 5380$ A (probably NH_2) and some emissions in the region $\lambda\lambda$ 6500 – 6900 A (probably NH_2). The identification of the features was made by using Table III of Swings and Haser's Atlas (1956).

It is indubitable that dust component of the comet's coma was strongly dominant, but in contradistinction to Kohoutek's (1970) communication not only the continuous spectrum, but also weak usual emission bands of cometary spectra were present in the spectrum of Comet 1970 III, shortly after its perihelion passage.

References

[1] KOHOUTEK L.: 1970, IAU Circ. 2256
[2] SWINGS P., HASER L.: 1956, Atlas of the Representative Cometary Spectra. Liège.