

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 372

Konkoly Observatory
Budapest
1969 August 29

EMISSION OBJECT MH α 328-116 = V 1016 Cyg

Spectral observations of V 1016 Cyg = MH α 328-116 were carried out in the Cracow Observatory. The spectrograms were taken on July 23, 26, 27, 28 and August 6, 1969 with a 5° objective prism attached to the 35 cm Maksutov reflector. The dispersion is 320 Å/mm at H γ . The ZU2 (ORWO-Astro-Special-unsensitized) plates were used.

Two plates, from July 23 and August 6, were calibrated photometrically and the intensities of the emission lines being the means of two night values were given in Table 1. All intensity estimates have been reduced for the plate sensitivity.

On the spectrum plate taken July 26, the lines Fe II ($\lambda\lambda$ 4582.8, 4583.8), [Fe II] (λ 4413.8), He I ($\lambda\lambda$ 4026.1, 3819.6) and He II (λ 4685.7) appear to be somewhat stronger relative to the hydrogen lines than in the other spectra, especially He I (λ 4026.1) and He II (λ 4685.7).

In general, the spectrum of V 1016 Cyg = MH α 328-116 shows the character described by FitzGerald (1966) and McCuskey (1967). The continuum is extremely weak and on the plates obtained at Cracow it is impossible to find any traces of absorption lines.

However, some significant changes can be observed. The line He II (λ 4685.7) was observed by FitzGerald (1966) in July and September 1965 to have a broad and very weak emission feature, later McCuskey (1967) observed it sharp and strong. The present observations of this line show it as a broad and rather weak feature. The [O III] lines are very strong but λ 4363.2 mentioned by McCuskey to be considerably stronger relative to λ 4958.9 and λ 5006.8 [O III] is at present weaker than λ 5006.8, which is extremely intense. The very strong intensity of the forbidden lines [Ne III] is striking, especially at λ 3868.7.

Cracow, August 1969

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References

- Bloch, 1965 I.A.U. Circular No. 1927.
FitzGerald, Houk, McCuskey, Hoffleit, 1966, ApJ 144, 1135.
McCuskey 1967 I.A.U. Circular No. 2018.
Rosino 1965 I.A.U. Circular 1917.

Table 1
 Identification of Emission Lines in V 1016 Cyg

Suggested identification	Element	Intensity* I _{Hβ} = 100
3797.9 A	H 10	23.5
3819.6	He I	----
3835.4	H 9	36.8
3868.7	[Ne II]	265.8
3889.0	H 8	62.2
3967.5 } 3967.5 } 3970.1 }	He I } [Ne II] } He }	102.7
4026.2	He I	----
4067.9 } 4068.6 } 4068.9 }	C III } [S II] } C III }	15.3
4076.2	[S II]	18.1
4101.7	H 8	44.6
4276.8 } 4287.4 } 4305.9 }	[Fe II] } [Fe II] } [Fe II] }	9.3
4340.5	H	59.9
4363.2	[O III]	116.4
4413.8 } 4414.4 } 4416.3 }	[Fe II] } [Fe II] } [Fe II] }	7.2
4470.3 } 4471.5 } 4472.9 }	[Fe II] ? } He I } Fe II }	14.0
4582.8 } 4583.8 }	Fe II } Fe II }	----
4640.6	N III	13.9
4686.7	He II	23.1
4713.4	He I	16.2
4861.3	Hβ	100.0
4921.9 } 4958.9 }	He I } [O III] }	91.0
5006.8	[O III]	291.4

* intensities of the lines reduced for the plate sensitivity.