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Konkoly Observatory
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S 10376 = NOVA HERCULIS 1968

This fast or even very fast nova was discovered near the star β Her in comparing one pair of plates. As a sufficient amount of plates was available the very rapid increase of brightness on June 30, 1968, as well as essential parts of the decline could be observed. (At the end of July 1968 the object was again invisible.)

The following observations were obtained on plates ZU2 without filter at the astrograph 400/1600 mm:

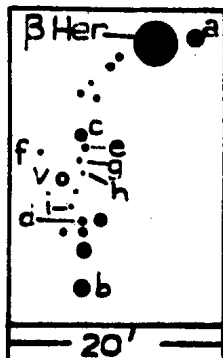
J.D.	Mag.	J.D.	Mag.	J.D.	Mag.
24400		24400		24400	
33.50	[17 ^m	39.50	12.4 ^m	67.41	15.0 ^m
37.45	[17	40.46	12.4	67.46	15.0
37.50	[17	59.40	14.9	67.50	14.9
38.44	13.0 x	60.42	14.9	68.42	16.0
38.45	12.5	65.39	14.7	68.49	16.0
38.50	12.5	66.41	14.8	68.53	16.0
39.45	12.3	66.46	14.8	69.49	16.5
39.45	12.4 x	66.50	14.9	69.53	16.5
39.45	14.0: xx	66.53	14.9		

Remarks:

- x Sky Patrol plates Zu2 without filter
- xx Sky Patrol plates Raman Pan + GG 14

Adopted magnitudes of the comparison stars:

a	11.2 ^m	f	14.9
b	12.3	g	15.0
c	12.8	h	15.4
d	14.2	i	16.0
e	14.4		



The nova is invisible on the red and blue plates of the Palomar Sky Atlas. The amplitude of the light variation is therefore 8 mag. or more.

The approximate position of the object is as follows:

$$\begin{array}{ll} \text{RA (1855)} = 16^{\text{h}} 24^{\text{m}} 6 & \text{D (1855)} = +21^{\circ} 37' \\ 1^{\text{II}} = 38^{\circ} & b^{\text{II}} = +41^{\circ} \end{array}$$

From the high galactic latitude of the object (s. above) we may draw an important conclusion:

McLaughlin gives for the mean absolute magnitude of a fast nova -8.3 , Payne-Gaposchkin assumes a mean absolute magnitude of all novae -7.6 . If we take the second value as the right one and if we suppose the apparent magnitude at maximum light to be 12^{m} and the interstellar extinction to be about 0.15 , we get for the distance modulus $M-m = 19$. The distance of the nova would then be 63 kpc, corresponding to $z = 42$ kpc, which means that the object must be in the intergalactic space. Even if the absolute magnitude at maximum light would be far below the mean value of the typical novae, it would still be at a striking distance z from the galactic plane.

There is furthermore the interesting fact of the very high negative colour index at J.D. 2440039 (s. table) which is also to be seen from the extraordinary image of the star on the plates of the astrograph 400/1600 mm. Perhaps this could be explained by strong emissions in UV.

