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ZZ Hyi IS A POORLY STUDIED GALAXY

PASTUKHOVA, E. N.

Institute of Astronomy, Russian Academy of Sciences, 48, Pyatnitskaya Str., Moscow 109017, Russia

The variability of ZZ Hyi (S 6653) within $16^m5 - 17^m5$ pg was announced by Hoffmeister (1963) who had considered it a possible RR Lyrae star, difficult for investigation because of being faint. His published declination for the star was wrong by one degree. The star was later studied by Geßner (1981) who corrected the declination. She gives the variability range as $16^m6 - (17^m$, also calls the object a possible RR Lyrae star, and presents four times of brightening.

In the course of our work on improving coordinates for all stars of the GCVS Volume II, ZZ Hyi was confidently identified with an object in the US Naval Observatory A2.0 catalog (Monet et al., 1998) at the following position: $0^h27^m48^s07, -78^\circ37'44''.8$ (2000.0), with the blue and red magnitudes of 13^m2 and 12^m7 , respectively. In the Hubble Space Telescope Guide Star Catalog (Lasker et al., 1990), this is a non-stellar object GSC 9350.1587 (14^m9). We have inspected five images of the field from large Schmidt telescopes made available by the US Naval Observatory (USNO Pixel Server). The two images in blue light and three images in red light show that the object is definitely non-stellar; some hints to a spiral structure can be noticed, and the object is more compact in red light, suggesting that it is a spiral galaxy. The brighter magnitudes in the USNO A2.0 catalog and Guide Star Catalog compared to Sonneberg data are probably just due to the extended appearance of the object. Its variability found in Sonneberg cannot be real but rather reflecting variations of seeing.

The finding chart from Hoffmeister (1963) is reproduced in Fig. 1, and the image of the field from the Digitized Sky Survey is presented in Fig. 2.

Strangely enough, we could not find the galaxy among objects studied in the optical range and listed in the NED extragalactic data base (<http://nedwww.ipac.caltech.edu/>), despite its rather high brightness. The only object suggested by the data base within $3'$ from the position of the galaxy is the radio source PMN J0027–7838 in $1.3'$ from it, at nominal position $0^h27^m24^s.2, -78^\circ38'14''$ (Wright et al., 1994). The rather poor positional accuracy of the radio source (uncertainties of $\sim 2'$ in both coordinates) does not exclude identification, though spiral galaxies are seldom associated with radio sources.

We found the star in the Lyon–Meudon (LEDA, (<http://leda.univ-lyon1.fr/>)) extragalactic data base as an object of the Catalogue of Principal Galaxies (PGC, Paturel et al., 1989). It is PGC 232232, a galaxy with integrated B magnitude 16^m78 . The LEDA data base also gives no information on the galaxy's radial velocity.

We would like to encourage astronomers with access to southern telescopes to verify the spiral nature of the object and to measure the galaxy's redshift.

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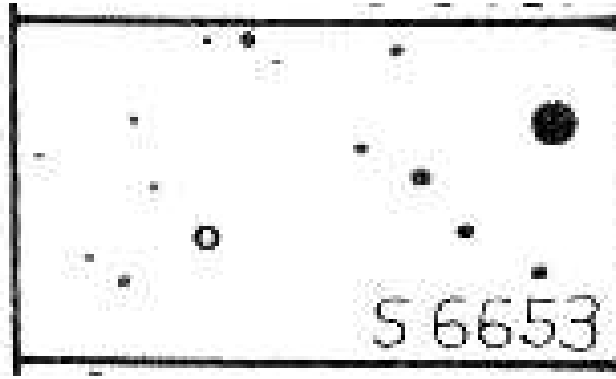


Figure 1. A reproduction of the finding chart from Hoffmeister (1963). South is at the top.

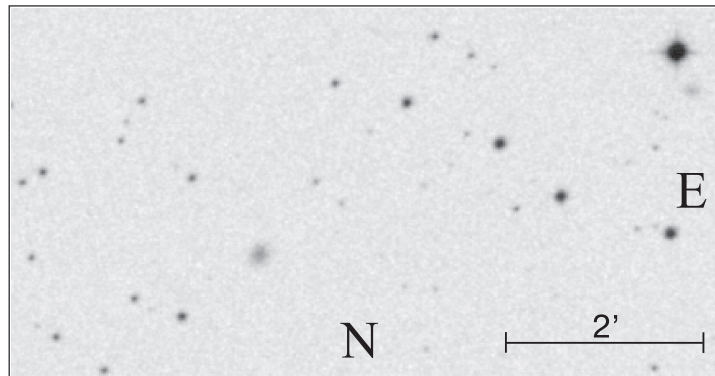


Figure 2. A DSS-II red image of the field of ZZ Hya. South is at the top.

References:

- Geßner, H. 1981, *Veröff. Sternw. Sonneberg*, **9**, 361
Hoffmeister, C. 1963, *Veröff. Sternw. Sonneberg*, **6**, Nr. 1
Lasker, B.M.; Sturch, C. R.; McLean, B. J. et al., 1990, *Astron. J.*, **99**, 2019
Monet, D.; Bird, A.; Canzian, B. et al. 1998, *USNO A V2.0. A Catalog of Astrometric Standards*, US Naval Observatory (11 CD-ROMs)
Paturel, G.; Fouqué, P.; Bottinelli, L.; Gouguenheim, L. 1989, *Astron. Astrophys.*, Suppl. Ser., **80**, 299
Wright, A. E.; Griffith, M. R.; Burke, B. F.; Ekers, R. D. 1994, *Astrophys. J. Suppl. Ser.*, **91**, 111