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## Optical spectroscopy and photometry of SN2014J in M82

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on **29 Jan 2014; 12:46 UT**

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Subjects: Optical, Supernovae

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During the commissioning of the new echelle spectrograph attached to the 2m RCC telescope of NAO Rozhen (Bulgaria) we obtained a high-resolution spectrum of [SN2014J](#) on January 23.75UT. The spectrum covers the range 3900-9200Å with a resolving power ~30000. The most prominent feature in our spectrum is the SiII 6355Å absorption with an EW ~120Å and FWHM ~220Å. Other well visible absorptions are SiII 5972Å, SiII 5468Å and the blend SiII 5612, 5654Å with EW 20Å, 27Å, 24Å and FWHM 126Å, 105Å and 96Å respectively. The CaII IR triplet appears as a very wide absorption blend centered at about 7900Å with EW ~100Å. The SiII 6355Å absorption gives a radial velocity of about 14100km/s. While the velocity measured using the lines SiII 5972Å and SiII 5468Å is ~12300km/s. A similar velocity difference was reported in ATel #[5818](#). The inter-stellar NaI D absorptions present in our spectrum a sharp component shifted by about -2km/s. All the other galactic, inter-galactic and host galactic components (see Cox et al., ATel #[5797](#)) are blended in wide absorption structures between 40km/s and 220km/s with EW 2.4Å for D1 line and 2.6Å for D2 line. Using a SBIG-STL-1001 CCD camera attached to the 60cm Cassegrain telescope at the Nicolaus Copernicus

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University Observatory (Torun, Poland) we estimated the BVR brightness of **SN2014J** to be  $B=12.20\pm 0.02$ ,  $V=10.93\pm 0.02$  and  $R=10.37\pm 0.02$  on January 25.73UT. GSC 4383-1106 ( $B=12.832\pm 0.097$ ,  $V=12.215\pm 0.051$ ,  $R_c=11.97\pm 0.129$ ) was used as a comparison star. Its B and V magnitudes were taken from The AAVSO Photometric All-Sky Survey (<http://www.aavso.org/apass>). The  $R_c$  magnitude was obtained using Fukugita et al. (1996, AJ, 111, 1748) formula and Sloan  $r'=12.138\pm 0.028$  from The AAVSO Photometric All-Sky Survey.

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