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Nova Cephei 2013 has emerged from dust obscuration

ATel #5389; *U. Munari, P. Ochner (INAF Padova-Asiago), A. Siviero (Univ. Padova, Asiago), M. Graziani, S. Dallaporta, G. L. Righetti, G. Cherini, F. Castellani (ANS Collaboration)*
*on **12 Sep 2013; 17:07 UT***
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Nova Cep 2013 was discovered by K. Nishiyama and F. Kabashima on Feb 2.4 UT at 10.3 unfiltered magnitude (CBET #3397). After maximum brightness was reached around Feb 4.2 UT at B=13.15, V=11.23, Rc=9.94 and Ic=8.81, the nova begun a normal decline that was interrupted by dust forming in the ejecta when the nova was 3.4 mag below maximum in V band (cf. Munari et al. ATel #4893). The formation of dust was later confirmed by infrared observations (Raj et al. ATel #5026; Ninan et al. ATel #5269). Attempts to detect the nova at radio wavelengths and in the X-rays have been reported by Chomiuk et al. (ATel #4950) and Dutta et al. (ATel #5375).

We have followed the BVRcIc photometric evolution of the nova during the dust formation with various ANS Collaboration telescopes. In a matter of only a few days after the onset of dust formation, the nova dropped below optical detection. Our last attempt on Apr 12.3 UT to detect it provided an upper brightness limit of V>19.5. In the following months sparse revisits were paid to the nova field looking for its emergence from dust obscuration.

The first positive detection of the nova occoured on Aug 17, after which the photometric observations were conducted also with the Asiago 67/92cm Schmidt telescope in addition to the ANS Collaboration telescopes. The last set of observations collected between Sep 4 and 7 allow measure the nova at average B=20.0, V=18.25, Rc=17.22, Ic=16.68. The red colors seem primarily a consequence of the large interstellar reddening affecting the nova.

Preliminary low resolution spectra (2.3 Ang/pix, range 3200-7700 Ang) of the nova after the emergence from dust obscuration were obtained with the Asiago 1.22m + B&C spectrograph on Sept 7 and 11. Given the faintness of the nova, its red color and the short exposure times (30 min), the spectrum of the nova is recorded only longword of 4700 Ang. It is of the nebular type, dominated by the emission lines of Hbeta, Halpha, [OIII] 4959 and 5007 Ang, [NII] 5755, and [OII] 7325. The emission line profiles are all similar and double peaked. The velocity separation of the two peaks ranges from the 1000 km/s of Halpha to 1210 km/s for [OIII], and the width at half maximum from 1670 km/s of Halpha to 1880 km/s for [OIII]. The full width at zero intensity of emission lines is about 3400 km/s.

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