"Spectroscopy of the very fast Nova Del 2013, already declining past maximum brightness"

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Nova Del 2013 seems to have reached maximum brightness on August 16.45 UT at V=4.3 mag. It immediately entered the decline phase and it is declining pretty fast, of the order of 1 mag in a day, qualifying it as a very fast nova if the pace will be maintained on the coming days. Also the rise toward maximum has been real fast, 2 mag in about 1.5 days according to our photometry and AAVSO database. The total outburst amplitude is 12.6 mag in V, adopting V=16.9 mag for the progenitor as given by GSC 2.3.2. We are monitoring the nova in high resolution with the Echelle spectrographs on the Varese 0.61m (res.pow. 18000, range 3900-8600 Ang) and Asiago 1.82m (res.pow. 22000, range 3400-7300 Ang) telescopes, and in low resolution mode with the Asiago 1.22m (2.3 Ang dispersion, range 3200-7700 Ang) and the Polse di Cougnes 0.70cm (1.1 Ang/pix, range 6550-9700 Ang) telescopes. The strong CaII (3934, 3968) and NaI (5890, 5896) interstellar lines appear single component and have an heliocentric radial velocity of -2.6 ± 0.2 km/s. The equivalent width of NaI 5890 is 0.3945 ± 0.003 Ang, which corresponds to a reddening of E(B-V)=0.182 following the calibration by Munari and Zwitter (1997, A&A 318, 269). All strongest diffuse interstellar bands are readily visible: 5780 (equivalent width 0.136 Ang), 5797 (e.w. 0.014 Ang), 6196 (e.w. 0.010 Ang), 6203 (e.w. 0.048 Ang), 6614 (e.w. 0.024). Their low intensities confirm the modest reddening affecting the nova, as also indicated by the blue energy distribution of the fluxed spectra and the low B-V color from photometry. The high Galactic latitude of the nova, -9.4 deg, means that the line-of-sight exits the dust layer on the Galactic equator well before reaching the nova, which is the main reason for the low observed reddening. Extrapolating the rate of decline observed during the first 24 hours, the decline time could be as short as t(2)=2 days, which would indicate a distance of 5.5 kpc according to the calibration by Cohen (1988, ASPC 4, 114) or 3.5 kpc following Della Valle (1991, A&A 252, L9). In addition to the description of earlier spectroscopic reports (cf. CBET 3628, ATel #5279, #5282, #5288, #5291, #5294, #5295), we may note here that: (1) line profiles are rapidly and profoundly changing, on time scales of hours, both in their absorption and emission components; (2) Tarasova et al. (ATel #5291) reported a double peaked Halpha emission for Aug 15.8 UT. Our Echelle spectrum for Aug 15.83 shows a flat topped Halpha emission profile (confirming Tomov et al. ATel #5288), with - at best - only a feeble trace of a double peak; on Aug 14 the emission was trapezoidal in shape, on Aug 16 it turned into Gaussian profile; (3) HeI lines has weakened during the rise toward maximum: on Aug 14 they displayed a marked P-Cyg profile, on Aug 15 the emission component disappeared, and on Aug 16 also the absorption component vanished; (4) while the equivalent width of the absorption component of the P-Cyg profile of Balmer lines have remained essentially constant during the rise to maximum, that of emission component has steadily declined: for Hbeta it was -24.3 Ang on Aug 14.84, -14.6 Ang on Aug 15.83, -9.1 Ang on Aug 16.85 UT.