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Nova ASASSN-17hx fast returning to maximum brightness, now at much larger velocities

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on *11 Sep 2017; 21:54 UT*
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Subjects: Optical, Nova

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Nova ASASSN-17hx continues its unexpected and rapid re-brightening (ATel #[10725](#)), approaching the brightness attained at primary maximum when it peaked at $B=9.65$, $V=8.44$, $R=7.79$, $I=7.05$ around July 30.1 UT (ATel #[10641](#)). Our daily photometry from Italy and Chile shows that, after declining to a minimum $B=11.81$, $V=11.01$, $R=9.54$, $I=9.40$ around Sept 5.0 UT, well past $t(2)$, the nova abruptly begun a rapid rise in brightness, reaching $B=9.88$, $V=9.01$, $I=7.77$ on our last measurement for Sept 11.0 UT. The starting brightness and the rising pace of the current re-brightening episode resemble closely the final rise toward the first maximum, that suddenly begun on July 21 after a protracted plateau phase.

As part of our continuing spectroscopic monitoring of ASASSN-17hx we have just obtained an Echelle spectrum on Sept 11.80 UT with the Varese 61cm and an Astrolight mk.III multi-mode spectrograph. The spectrum is that typical of FeII novae around maximum, with strong Balmer and FeII emission lines from various multiplets, and no significant He lines. The Balmer and FeII lines present structured and multi-component P-Cyg absorptions. The absorption for H-alpha is composed by at least three components, at -500, -875 and -1130 km/s (with FWHM=115, 235 and 210 km/s, respectively). The Halpha emission, with a photo-center close to null heliocentric radial velocity, measures FWHM=770 km/s. Both the FWHM of the emission and the radial velocity of the absorptions are now much larger than observed during the rise toward the primary maximum of July 30.

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