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An ongoing active phase for the old symbiotic nova AG Peg

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ATel #5258; *U. Munari (INAF Padova), P. Valisa, S. Dallaporta, G. Cherini, G. L. Righetti, F. Castellani (ANS Collaboration)*
on **8 Aug 2013; 15:08 UT**

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Subjects: Optical, Nova

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The symbiotic nova AG Peg was shining at ~9 mag when in 1850 started the outburst that in 1871 reached a peak brightness of ~6 mag. The very slow rise to maximum was followed by an even slower decline that took longer than a century to complete. The star was at $m(\text{vis})=7.6$ in 1943, at $m(\text{vis})=8.1$ in 1963, $m(\text{vis})=8.5$ in 1983, and declined to $m(\text{vis})=8.75$ by 2003. We have closely monitored AG Peg over the last decade, observing how photometric and spectroscopic behavior was dominated by the ~827 day orbital periodicity. In particular, the brightness in the B band has followed the sinusoidal pattern expected from reflection effect (of the hard radiation from the WD illuminating the facing side of the non-variable M giant companion), from B~9.80 at maximum to B~10.25 at minimum. During the last weeks AG Peg has unexpectedly risen in brightness, about 0.3 mag above the brightness typical for that orbital phase. From B=9.79 on 2013 May 18, it continued to steadily rise to B=9.70 on June 18, and B=9.60 on July 18, peaking to B=9.570 on Aug 1, where it has remained ever since. Our last measurement reads U=8.95, B=9.577, V=8.430, Rc=7.314 and Ic=6.390 on 2013 Aug 07.986 UT. The unexpected rise in brightness is obvious at all bands. We obtained a fluxed low resolution spectrum on Aug 1 with the Asiago 1.22m telescope and B&C spectrograph (range 3230-7985 Ang, 2.31 Ang/pix) and high resolution Echelle spectrum with the Varese 0.61 cm (resolving power 17,000, range 3950-8630 Ang). Compared with equivalent spectra obtained at the same orbital phase during the previous orbital cycle, the most obvious change is the greater veiling at bluer wavelengths by a now much brighter nebular continuum, effectively overwhelming the M giant absorption spectrum shortward of 5500 Ang. The profiles of emission lines remain very sharp, with FWHM values of 42 km/s for HeI singlet and FeII lines, and 62 km/s for HeI triplet and HeII lines, and ~105 km/s for Balmer lines which shows a complex structure, values which are all about 15% smaller than typical for the current orbital phase. No P-Cyg absorption component is present at a preliminary inspection.

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