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Asiago spectroscopic classification of 3 transients

ATel #11168; *L. Tomasella, S. Benetti, E. Cappellaro, M. Turatto (INAF OAPd)*
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The Asiago Transient Classification Program (Tomasella et al. 2014, AN, 335, 841) reports the spectroscopic classification of AT 2018eq discovered by R. Belligoli (ISSP) in the direction of M31; PS18bq (AT2018bi) discovered by J. Grzegorzec and Pan-STARRS1 in UGC1791; and AT2018C (= Gaia18aak), a blue hostless transient discovered by Gaia.

The observations were performed with the Asiago 1.82 m Copernico Telescope equipped with AFOSC (range 340-820 nm; resolution 1.4 nm).

Survey Name	IAI Name	Discovery date (UT)	Discovery mag	Observation (UT)	Type	z	Notes
	AT2018eq	2018-01-12 17:22:33	17.8 (unfiltered)	2018-01-13 18:20:00	CV	Galactic	(1)
PS18bq	SN2018bi	2018-01-07 19:45:07	17.1 (unfiltered)	2018-01-13 19:30:00	Ia	0.01668	(2)
Gaia18aak	AT2018C	2018-01-01 03:30:14	16.84 (G-Gaia)	2018-01-13 21:30:00	CV	Galactic	(3)

(1) The spectrum shows a blue continuum with the Balmer emission lines at rest wavelength.

(2) We measure the redshift of the host galaxy from the narrow H α emission ($z=0.01668$). Even if the spectrum of SN2018bi is noisy (due to bad seeing/sky condition), a fairly good match is obtained with Type Ia SNe, few days before maximum light. A significant line-of-sight reddening is suggested by the presence of narrow absorption features that should be attributed to NaI D and also by the red continuum of the spectrum. The velocity of the ejecta, as measured from SiII 635.5 nm, is about 9800 km/s.

(3) The spectrum is characterized by a strong blue continuum. There is a weak H α emission surrounded by broad absorption troughs. The emission core in H β and H γ absorption is only perceptible, while higher Balmer lines are in pure absorption.

Classifications were done with GELATO (Harutyunyan et al. 2008, A&A, 488, 383) and SNID (Blondin and Tonry 2007, ApJ, 666, 1024). The Asiago classification spectra are posted at the website <http://sngroup.oapd.inaf.it>.

Padova-Asiago SN group

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