

[SN 2011gu](#) (A.R. 23 06 02.80, Dec. +34 06 36.7) scoperta il 14 ottobre 2011 nella galassia NGC 7485 (offset 22E 8N), magnitudine 17, tipo Ia.

SN scoperta da F. Martinelli, R. Mancini e F. Briganti all'osservatorio astronomico di Montecatini val di Cecina (Pisa).

NGC 7485 è una galassia S0 nella costellazione del Pegaso, distante 81 Mpc, magnitudine 14.1.



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SUPERNOVA 2011gu IN NGC 7485 = PSN J23060280+3406367

A. Dimai, Cortina d'Ampezzo, Italy, on behalf of the Italian Supernovae Search Project (ISSP), reports the discovery by Fabio Martinelli, Riccardo Mancini, and Fabio Briganti of an apparent supernova on unfiltered CCD images (limiting mag about 19.0) taken with the 0.35-m telescope of the Montecatini Valdicescina Observatory (Pisa, Italy) on Oct. 14.0299 UT (when the new object was at mag about 18.0) and 14.9319 (when it was at mag about 17.6). The variable is located at R.A. = 23h06m02s.80, Decl. = +34d06'36".7 (equinox 2000.0), which is 22" west and 8" north of the nucleus of NGC 7485. Nothing is visible at this position on Palomar Sky Survey infrared, red, and blue plates. The variable was designated PSN J23060280+3406367 when it was posted at the Central Bureau's TOCP webpage and is here designated SN 2011gu based on the spectroscopic confirmation reported below.

Additional CCD magnitudes for 2011gu (unfiltered unless otherwise noted): 1989 July 14, [21 (Digitized Sky Survey red plate; via Vitali Nevski, Vitebsk, Belarus); 2011 Oct. 1, [19.5 (ISSP); 15.888, 17.4 (S. Leonini and L. M. Tinjaca Ramirez, Siena, Italy; 0.53-m f/8.7 reflector + U47 camera at Montarrenti Observatory); 15.9, 17.0 (A. Dimai, 0.28-m telescope, Col Drusci Observatory); 15.920, R = 17.5 (Federica Luppi, Luca Ghirotto, and Mirko Maffioli, Varese, Italy; 0.36-m f/7.9 reflector + Bessell R filter; position end figures 02s.81, 36".0; CMC-14 catalogue for reference stars; image posted at website URL http://www.astrogeo.va.it/pub/TOCP/PSN_N7485.jpg); 16.117, 17.8 (Joseph Brimacombe, Cairns, Australia; position end figures 02s.79, 36".7; image posted at URL <http://www.flickr.com/photos/43846774@N02/6250906523/>); 16.913, 17.4 (C. Jacques and E. Pimentel, Belo Horizonte, Brazil; remotely using the GRAS 07 telescope at Nerpio, Spain; limiting magnitude 18.5; position end figures 02s.81, 36".2; UCAC2 reference stars; image posted at website URL http://ceamig-rea.net/tocp/ngc7485_tocp.png); 16.758, 16.9 (Nick James, Chelmsford, Essex, England; Celestron C11 telescope + ST9XE camera; position end figures 02s.83, 36".0; UCAC-3 reference stars); 18.144, 17.8 (Brimacombe); 18.763, R = 17.3 (Nevski, 0.3-m reflector; position end figures 02s.82, 36".1; UCAC-3 catalogue reference stars).

L. Magill, M. Fraser, and R. Kotak, Queen's University, Belfast; and A. Pastorello, Osservatorio Astronomico di Padova, Istituto Nazionale di Astrofisica, Universita di Padova, report that an optical spectrogram (range 390-1000 nm) of PSN J23060280+3406367 = SN 2011gu was obtained with the William Herschel Telescope (+ ACAM) on Oct. 15.01 UT. The spectrum was

cross-correlated with a library of supernovae spectra using the "Gelato" code (Harutyunyan et al. 2008, A.Ap. 488, 383). The best fit was with the peculiar type-Ia supernova 1991bg at an epoch of 2 days post-maximum (Filippenko et al. 1992, A.J. 104, 1543); however, the blue end of the spectrum is relatively noisy, and the Ti II trough that characterizes the SN-1991bg sub-class does not seem to be as pronounced in 2011gu. The strength of the O I 777.4-nm feature is comparable to that of SN 1991bg. An expansion velocity of 9000 km/s is measured from the Si II absorption feature found at 635 nm, corrected for the expansion velocity of the host galaxy, NGC 7485 (5706 km/s; Wegner et al. 1993, A.J. 105, 1251; via the NED website). The authors tentatively identify a feature at the rest wavelength of NGC 7485 that is likely due to Na I D lines (equivalent width of 31.5 nm), suggesting non-negligible extinction within the host galaxy.

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