

SN 2013he (A.R., 12 53 06.27 Dec. +36 49 00.1), scoperta il 9 dicembre 2013 nella galassia ngc 4774 (offset 3W 7S), magnitudine 16.5, tipo: IIP

PSN individuata da S. Leonini, G. Guerrini, P. Rosi, L.M. Tinjaca Ramirez and M. Conti con il telescopio Newton da 53cm dell'Osservatorio di Montarrenti (Siena).



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SUPERNOVA 2013he IN NGC 4774 = PSN J12530627+364900 = PSN J12530627+3649001

Simone Leonini, Siena, Italy, reports the discovery by S. Leonini, G. Guerrini, P. Rosi, L. M. Tinjaca Ramirez, and M. Conti of an apparent supernova (mag about 16.5) on two unfiltered CCD images (limiting mag about 18.8) taken on Dec. 9.135 UT at the Montarrenti Observatory in the course of an automatic survey of the Italian Supernovae Search Project using a 0.53-m f/8.7 Ritchey-Chretien telescope (+ Apogee Alta U47 camera). The new object is located at R.A. = 12h53m06s.27 +/- 0".3, Decl. = +36d49'00".1 +/- 0".2, equinox 2000.0), which is 3" west and 7" south of the nucleus of the galaxy NGC 4774. Nothing is visible at this position on Palomar Sky Survey infrared, red, and blue plates (1995 May 20, F plate; 1983 Feb. 17, J plate; and 1990 Mar. 18, N plate; limiting mag 19.5). The image of the variable was posted at URL http://www.astrofilisenesi.it/public/Sne/Uploads/PSN_in_NGC4774.jpg. The variable was designated PSN J12530627+364900 initially (due to an incorrect posting by Leonini) and then properly as PSN J12530627+3649001 when it was posted at the Central Bureau's TOCP webpage and is here designated SN 2013he based on the spectroscopic confirmation reported below. Additional CCD magnitudes for 2013he: Dec. 7.784, 16.5 (Kunihiro Shima, Fuchu, Tokyo, Japan; pre-discovery image taken with a 0.45-m f/12 reflector + FLI ML-8300 camera Fujimi-machi, Nagano, Japan; limiting mag 17.3; position end figures 06s.33, 48'59".8; offset 1".7 west, 11" south; measured and communicated by Toru Yusa, Osaki, Japan, who adds that there is a spot of red mag 15.5 on a Digitized Sky Survey image from 1989 Mar. 30 with position end figures 06s.51, 49'01".3); 10.518, 17.8 (J. Brimacombe, Cairns, Australia; remotely using a 51-cm telescope at the New Mexico Skies observatory near Mayhill, NM, U.S.A.; image posted at URL <http://www.flickr.com/photos/43846774@N02/11314458146/>); 11.149, 16.6 (Leonini; limiting mag about 19.2); 11.168, 16.9 (Fabio Martinelli, Montecatini Val di Cecina, Italy; 41-cm telescope); 11.435, 17.7 (Brimacombe; position end figures 06s.25, 48'59".9).

L. Tomasella, P. Ochner, S. Benetti, A. Pastorello, E. Cappellaro, N. Elias-Rosa, and M. Turatto, Osservatorio Astronomico di Padova, Istituto Nazionale di Astrofisica, report that an optical spectrogram (range 340-820 nm; resolution 1.3 nm) of PSN J12530627+364900 = SN 2013he, obtained on Dec. 11.17 UT with the Asiago 1.82-m Copernico Telescope (+ AFOSC), shows that it is a type-II supernova. Broad and shallow P-Cyg lines of H-alpha, H-beta, and He I 587.6-nm are clearly detected. Adopting for the host galaxy a redshift $z = 0.0278$ (de Vaucouleurs et al. 1991, RC3.9; via NED), a good fit is found with the type-IIP supernova 1999gi (Leonard et al. 2002, A.J. 124,

2490) about one week after explosion. The FWHM of the H-alpha emission is about 8500 km/s. The Asiago classification spectra are posted at URL <http://sngroup.oapd.inaf.it>; classification was made via GELATO (Harutyunyan et al. 2008, A.Ap. 488, 383) and SNID (Blondin and Tonry 2007, Ap.J. 666, 1024).

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