

<b>Outside</b>
GCN IAUCs
<b>Other</b>
ATel on <a href="#">Twitter</a> and <a href="#">Facebook</a> <a href="#">ATELstream</a> <a href="#">ATel Community Site</a> MacOS: <a href="#">Dashboard Widget</a>

# The Astronomer's Telegram

[Post](#) | [Search](#) | [Policies](#)  
[Credential](#) | [Feeds](#) | [Email](#)

22 May 2014; 14:51 UT

This space for free for your conference.

[ [Previous](#) | [Next](#) | [ADS](#) ]

## The decline of the super-soft X-ray source in Nova Mon 2012

ATel #4845; *K. L. Page, J. P. Osborne (U. Leicester), U. Munari (INAF Padova), R. M. Wagner (LBT Observatory and Ohio State U.), A. P. Beardmore (U. Leicester), F. Castellani (ANS), S. Dallaporta (ANS), S. N. Shore (U. Pisa), S. Starrfield (ASU) and C. E. Woodward (U. Minn.)*

on 27 Feb 2013; 16:42 UT

Credential Certification: *Kim Page (kpa@star.le.ac.uk)*

Subjects: Infra-Red, Optical, Ultra-Violet, X-ray

Referred to by ATel #: [4907](#)

[Tweet](#) 2

Nova Mon 2012 has been regularly observed by Swift from 58 days after the Fermi-LAT detection on 2012 Jun 22 (ATEL #[4224](#), ATEL #[4310](#)) and monitored approximately daily since the onset of the super-soft source on day 150 (2012 Nov 18). The 0.3-0.8 keV soft X-rays count-rate reached a peak count rate of  $\sim 3$  count  $s^{-1}$  around day 193 (2013 Jan 1), and has since been following a monotonically fading trend (with a super-imposed periodicity of 7.1 hr; Osborne, Beardmore & Page, ATEL #[4727](#)).

By around day 247 (2013 Feb 23), the super-soft spectral component had fallen to  $\sim 0.03$  count  $s^{-1}$ , a factor of  $\sim 100$  below its peak. In contrast, the harder X-ray flux ( $E > 0.8$  keV) has continued to decline much more slowly.

In the UVOT uvm2 filter (central wavelength = 2246 Å), the source has faded continuously since the first observation, more slowly during the super-soft rise and more rapidly since around day 220 (2013 Jan 28). The UV flux thus shows a hint of the super-soft source intensity evolution.

We have monitored the BVRI photometric evolution of Nova Mon 2012 daily since its discovery with several ANS (Asiago Novae and Symbiotic stars) Collaboration telescopes, as well as other facilities including the MDM (Michigan-Dartmouth-MIT) observatory on Kitt Peak (ATEL#[4737](#)); spectroscopic monitoring has also been performed with the NOT (Nordic Optical Telescope). [Fe VII] 6086 Å emission turned on after the start of the super-soft emission and is now fading with the ejecta. The photometric decline has been exceptionally smooth during the whole evolution, with the only superimposed noise being caused by the low amplitude 7.1 hr periodicity. Around day 231 (2013 Feb 8), a knee began to develop in the lightcurve simultaneously in all photometric bands. This faster drop in brightness continued for three days (0.25 mag in the B-band, 0.15 in I-band), suggesting a rapidly decreasing energy deposition in the ejecta by the central source. On the fourth day after the knee appeared the nova light started to level off, and then resumed the previous slower decline. A similar knee was observed in U Sco and V407 Cyg at the time the super-soft source was turning off.

### Related

- [5649 Fermi-LAT Gamma-ray Observations of Nova Centauri 2013](#)
- [5525 Optical Spectroscopy of Gamma-ray Nova Sco 2012 in the nebular stage](#)
- [5500 Observations of Nova Mon 2012 after it emerged from the conjunction with the Sun](#)
- [5499 Optical Spectroscopy of V959 Mon \(2012\) in the Nebular Stage](#)
- [5470 Detection of super-soft emission in nova V339 Del](#)
- [5342 Continued Fermi-LAT gamma-ray monitoring of Nova Delphini 2013](#)
- [5305 Further X-ray observations of Nova Del 2013 with Swift](#)
- [5302 Detection of gamma rays from Nova Delphini 2013](#)
- [5297 Spectroscopy of the very fast Nova Del 2013, already declining past maximum brightness](#)
- [4920 Nova SMC 2012: a probable 20.4 hour period detected by Swift in the UV and X-ray](#)
- [4907 Near infrared photometric observations of Nova Mon 2012](#)
- [4853 Nova SMC 2012 \(OGLE-2012-NOVA-002\) is an ONe nova, which is now a super-soft X-ray source](#)
- [4845 The decline of the super-soft X-ray source in Nova Mon 2012](#)
- [4803 BVRI time series observations of the 7.1 hour period in Nova Mon 2012](#)
- [4764 The possible cause of the initial gamma ray emission from Nova Mon 2012; Continued Infrared observations.](#)
- [4737 Optical Confirmation of the 7.1 hour UV/X-ray Period in Nova Mon 2012](#)
- [4727 Nova Mon 2012: High soft X-ray variability and probable 7.1 hour UV/X-ray period](#)
- [4709 Nova Mon 2012 is a Neon nova](#)
- [4633 New Chandra observation of Nova Mon 2012](#)
- [4614 Supersoft X-ray rebrightening of Nova Mon 2012](#)
- [4590 Supersoft X-ray emission detected from Nova Mon 2012](#)
- [4572 Near infrared photometric monitoring observations of Nova Mon 2012](#)
- [4569 X-ray high-resolution Chandra spectrum and optical observations of nova Monocerotis 2012](#)
- [4542 Infrared observations show that Nova Mon 2012 is now in the coronal line phase](#)
- [4408 Nova Mon 2012 resolved as a double radio source](#)
- [4376 Follow-up radio observations](#)

	of Nova Mon 2012 at 10 - 142 GHz
4365	The progenitor of Nova Monocerotis 2012
4352	Dramatic Brightening of Nova Mon 2012 at High Radio Frequencies
4321	X-ray and UV observations of Nova Mon 2012
4320	High resolution spectroscopy and BVRI photometry of Fermi J0639+0548 = Nova Mon 2012
4310	Possible Association of the Gamma-ray Transient Fermi J0639+0548 with Nova Mon 2012
4288	Radio Monitoring of Nova Sco 2012
4287	Swift and SMARTS observations of Nova Sco 2012
4284	Fermi LAT Detection of a New Galactic Bulge Gamma-ray Transient in the Scorpius Region: Fermi J1750-3243, and its Possible Association with Nova Sco 2012
4224	Fermi LAT Detection of a New Gamma-ray Transient in the Galactic Plane: Fermi J0639+0548
4211	Near-IR observations of Nova Scorpii 2012 and Nova Ophiuchi 2012 No. 2
4157	MOA 2012 BLG-320: Discovery and Observations of a Nova Candidate Towards the Galactic Bulge
2905	OCRA monitoring of V407 Cyg at 30GHz
2741	EVLA monitoring of V407 Cyg
2546	Discovery of coronal emission lines in V407 Cyg
2536	VLBI detection of V407 Cyg
2529	V407 Cyg: Allen Telescope Array Observations
2511	Radio detection of V407 Cyg at 30GHz with OCRA-p on the Torun telescope
2506	Radio detection of V407 Cyg - the possible counterpart of the new Fermi LAT Gamma-ray Transient J2102+4542 with the Effelsberg 100-m, OVRO 40-m and IRAM 30-m telescopes
2498	INTEGRAL view of the sky field containing Fermi J2102+4542
2487	Fermi LAT Detection of a New Galactic Plane Gamma-ray Transient in the Cygnus Region: Fermi J2102+4542, and its Possible Association with V407 Cyg

---

[ Telegram Index ]

R. E. Rutledge, Editor-in-Chief  
 Derek Fox, Editor  
 Mansi M. Kasliwal, Co-Editor

rrutledge@astronomerstelegam.org  
 dfox@astronomerstelegam.org  
 mansi@astronomerstelegam.org