Erratum: SN 2007uy – metamorphosis of an aspheric Type Ib explosion

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We report three corrections to the paper 'SN 2007uy – metamorphosis of an aspheric Type Ib explosion' published in MNRAS, 434, 2032 (2013).

1) In the original article, the name of co-author Felipe Olivares E. was miswritten as E. Felipe Olivares.

2) The column headings for table 2 were found to contain a typographical error. The corrected version of the header for table 2 in the original paper is presented here as table 1.

3) In figure 2 of the original paper, a spectrum of SN 2008D was incorrectly used in place of SN 2007uy at +96d. This substitution was done in the original presentation of these data (Milisavljevic et al. 2010). Revised versions of the spectroscopic evolution of SN 2007uy (originally figure 2) and the corresponding line profiles (originally figures 4 and 5) are presented here in figure 1 and figures 2 and 3, respectively. As the spectra of SNe 2007uy and 2008D were taken at same epoch with the same spectroscopic setup, there is no change in the journal of spectroscopic observation presented in table 7 of the original paper. We note that these changes do not cause any significant difference in our initial conclusions.

In figure 2, the flux of every line has been scaled with

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respect to the peak flux of the H α line of the associated star forming region. However in order to show the late-time faint features, the spectral regions associated with the MgI, [FeII], NaID and OI λ 7774Å lines at +162d and +392d have been enlarged by 10 times. The spectral shifts of different lines are still prominent in the modified figure, but the merging of the features H and G2, as discussed in the original paper, is not clear from the corrected set of spectra.

The evolution of the Si II and He I lines has been replotted in figure 3. Although the existence of the Si II line is clear in all spectra, except for the dimming signature of He I λ 7281, most of the He I features are no longer clearly apparent by +96d. Unlike the standard Type Ib events, the overall evidence of He in SN 2007uy seems to be somehow reduced during its evolution, which rather designates it as another case of event that does not fit straightforwardly into the category of normal Type Ib SNe. Further discussion on the spectral peculiarity of this event is presented in Modjaz et al. (2014), who classify this event as a peculiar SN Ib.

ACKNOWLEDGMENTS

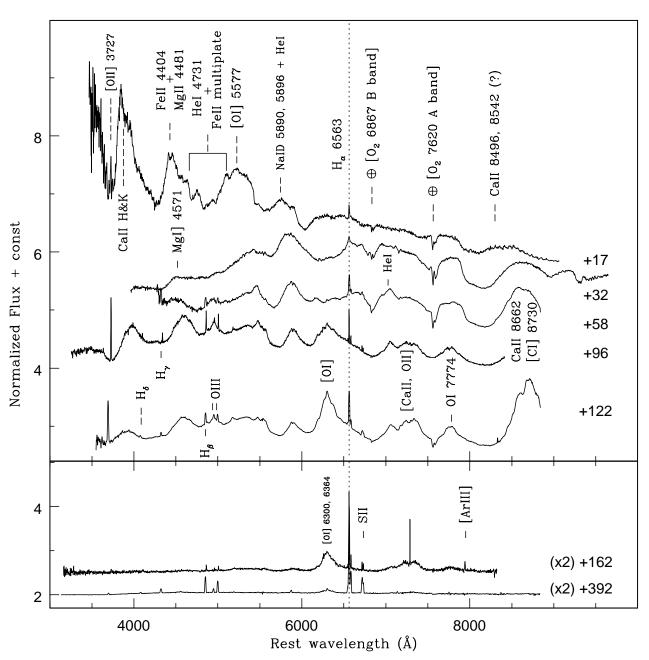
We thank M. Modjaz for alerting us to the confusion between the late-time spectra of SNe 2007uy and 2008D in our original paper.

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Table 1. Swift/UVOT photometry of SN 2007uy.

UT Date	JD	$Phase^{a}$	uvw2	uvm2	uvw1	u	b	v
(yy/mm/dd)	2454000 +	(day)	(mag)	(mag)	(mag)	(mag)	(mag)	(mag)



 $^a\mathrm{With}$ reference to the epoch of explosion JD 2454462.17

Figure 1. Spectroscopic evolution of SN 2007uy. All the spectra have been normalized with respect to the peak flux of the underling H α feature and a constant offset has been applied to present them clearly. The +162d and +392d spectra have been multiplied by a factor of 2 to enlarge several tiny features. The dotted vertical line represents the position of H α and confirms the wavelength calibration within the limits of the spectral resolution.

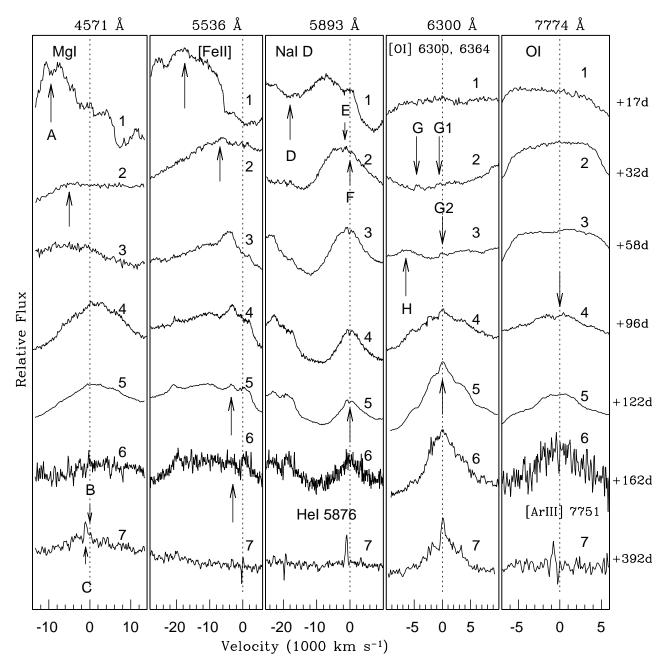


Figure 2. Temporal evolution of some spectral lines of SN 2007uy. The zero velocity shown with a dotted line in each panel marks the rest wavelength of the corresponding elements as mentioned at the top of the panels. The flux scale is relative. In this figure the flux of every line has been scaled with respect to the peak flux of the H α line of the associated star forming region. However to show the late-time faint features, the spectral regions associated with the MgI, [FeII], NaID and OI λ 7774Å lines at +162d and +392d have been enlarged by 10 times.

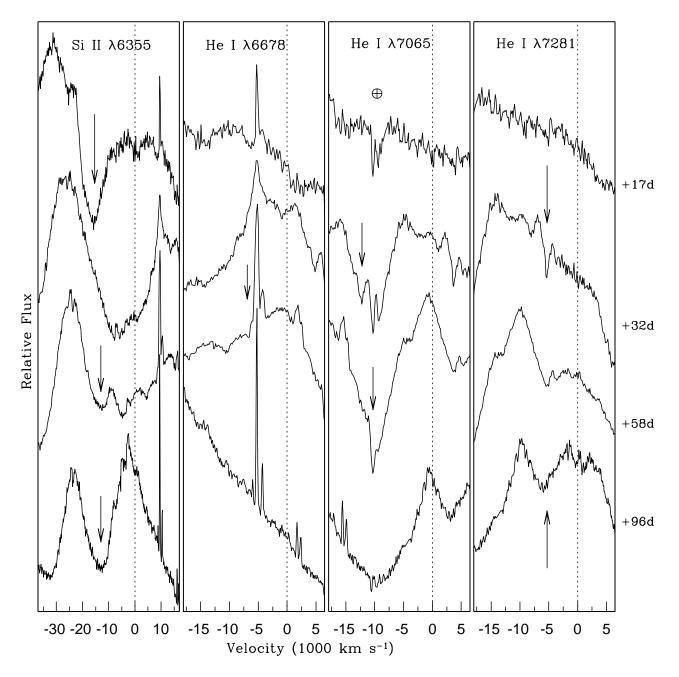


Figure 3. Temporal evolution of velocities of SiII and HeI spectral features in SN 2007uy.

REFERENCES

Milisavljevic D., Fesen R. A., Gerardy C. L., Kirshner R. P., Challis P., 2010, ApJ, 709, 1343 Modjaz et al., 2014, AJ, in press