

Erratum

Variability in ultra cool dwarfs: Evidence for the evolution of surface features

C. A. L. Bailer-Jones and R. Mundt

Max-Planck-Institut für Astronomie, Königstuhl 17, 69117 Heidelberg, Germany

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We highlight two minor errors in the paper. One refers to incorrect comments on the sign of the relative magnitude changes in some of the plots, the other is an error of 0.5 days in the Julian Date on some of the light curves. Neither error has any bearing whatsoever on the detection of variability or on the conclusions of the paper.

In the relative magnitude plots (Figs. 1, 3, 6, 8, 9, 11, 12, 13, 15, 16 and 18) the quantity plotted on the vertical axis, Δm , is equal to the quantity m_d defined in Eq. (3). This means that a lower point in these plots corresponds to a *brightening* of the star, *not a dimming* as might be expected. This is generally of no significance because these plots are used to demonstrate variability from a mean value, and the sign of that variability is irrelevant for almost all of the analyses in the paper (in particular for χ^2 and the power spectral analysis). However, in a few places in the text, Δm is nonetheless interpreted as $-m_d$, i.e. as if lower points corresponded to a dimming. In particular, what is described as a dimming of SDSS1203 around AJD 1606.2 should actually be referred to as a brightening (see Sect. 5.2; also see the last sentence of the abstract and Sect. 6.1). Consequently, it is not possible that this could be due to an eclipse by a fainter companion, as is stated as one of the possible explanations in the text. However, as was clearly pointed out in the paper, there was no direct evidence for this anyway, and this speculation had no bearing on the rest of the paper. (That the object is significantly brighter than the mean magnitude for this period of time is itself of interest.) Incorrect references to dimmings also appear in Sect. 5.2 when referring to

2M0913, S Ori 33 and S Ori 44, but only as verbal descriptions of the light curve, so these are of no consequence. The discussion in the last paragraph of Sect. 5.1 refers to a “lower average flux on the last (fourth) night” for a number of objects, but this discussion hinges on the fact that the light curves for these objects show a suspect *correlated* flux, rather than a *lower* flux. Moreover, as described in the paper, the affected data which showed this correlation were removed from the analysis anyway.

This misinterpretation of the plots has no further consequence: it does not change the detection of variability, or the power spectra, or the interpretation of the variability as being evidence for the evolution of surface features. Additionally, the simulations in Sect. 6.2 are not affected by this error.

The second error is a systematic offset of 0.5 days in the Julian Date for all of the data from the 99-09 and 00-02 observing runs. The easiest way to adjust for this is to add 0.5 to the AJD (Adjusted Julian Date, defined in Sect. 3.1 as $JD - 2450000$) for all data from the 99-09 and 00-02 observing runs. The definition of AJD is not changed. Specifically, this affects the AJDs of the observing periods specified in Sect. 3.1 as well as references to the AJD in the light curves for objects SDSS0539, SDSS1203, S Ori 45 and S Ori 44 in Sect. 5.2. Correspondingly, 0.5 should be added to the numbers on the horizontal axes of Figs. 3, 6, 9, 12, 13 and 16. Clearly, this error has no effect on any of the analyses or conclusions in the paper.

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