Erratum: Is the Nuclear Spin-Orbit Interaction Changing with Neutron Excess? [Phys. Rev. Lett. 92, 162501 (2004)]

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In this Letter, we reported a study of the Sn(α, t) reaction at 40 MeV, on the seven stable, even Sn isotopes, to study the pattern of $11/2^-$ and $7/2^+$ single-particle states as the neutron excess changes. The interpretation of the data relied only on the relative cross sections for these 14 transitions. The absolute cross sections given in Table I, columns 2 and 3, have now been found to be in error. This error has *no impact* on the rest of the paper, which utilized only the relative values of the cross sections. A numerical error in a measured quantity should, however, be corrected.

In the experiment, the cross sections were normalized to the yield for elastic scattering in a monitor detector placed at 9.1°. The collimator in front of the detector had a diameter of 1 mm. In the analysis, it was mistakenly assumed to have had a 1-mm *radius*.

The problem came to light in a recent experiment where the same reaction was studied at 37.5 MeV and significantly different cross sections were found [1], lower by a factor of ~3.7 if corrected for a small energy dependence, than those in the Letter. This factor is reasonably constant, showing a rms variation of 8.6% among the 14 transitions. This fluctuation is consistent with the estimated uncertainties from other sources.

In all subsequent experiments by our group, utilizing the spectrograph at the Yale tandem facility (e.g., Ref. [2]), a different technique for determining the absolute cross sections was used, a method that did *not* depend on a monitor at small angles. Instead, the target thicknesses were calibrated by measuring scattering at low bombarding energies and at larger scattering angles. This calibration was done directly with the spectrograph, using the same aperture as in the rest of the measurements. Therefore, the mistake reported here has no effect on the results reported from our subsequent measurements at Yale.

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[1] A. J. Mitchell, Ph.D. thesis, University of Manchester, 2012; the data will be submitted to XUNDL, http://www.nndc.bnl.gov/xundl/.

[2] J. P. Schiffer *et al.*, Phys. Rev. Lett. **108**, 022501 (2012).

