Erratum: Quadrupolar Phases of the $S = 1$ Bilinear-Biquadratic Heisenberg Model on the Triangular Lattice [Phys. Rev. Lett. 97, 087205 (2006)]

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Below Eq. (2) in Ref. [1], there is a misprint in the formula relating the scalar product of spin and quadrupolar operators to the permutation operator. The sign in front of the permutation is wrong, and the correct formula reads

$$\mathbf{Q}_i \cdot \mathbf{Q}_j + \mathbf{S}_i \cdot \mathbf{S}_j = 2\mathcal{P}_{i,j} - 2/3.$$

As it is written in the Letter, Eq. (5) is valid for pure quadrupolar states (real $\mathbf{d}'s$), but not for the general case of complex $\mathbf{d}'s$. The correct form of Eq. (5) for the general case reads

$$\langle \mathbf{Q}_i \cdot \mathbf{Q}_j \rangle = |\mathbf{d}_i \cdot \mathbf{d}_j|^2 + |\bar{\mathbf{d}}_i \cdot \mathbf{d}_j|^2 - 2/3; \qquad i \neq j.$$

This does not affect any of the results reported in the Letter. We have only used this equation to discuss the relationship between the sign of the biquadratic coupling and the type of quadrupolar order (ferroquadrupolar versus antiferroquadrupolar). The determination of the phase diagram has been performed using a different parametrization.

[1] A. Läuchli, F. Mila, and K. Penc, Phys. Rev. Lett. **97**, 087205 (2006).

