

Erratum: Level structure of ^{30}S and its importance in the $^{26}\text{Si}(\alpha, p)^{29}\text{P}$ and $^{29}\text{P}(p, \gamma)^{30}\text{S}$ reaction rates [Phys. Rev. C **86, 065805 (2012)]**

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In this paper, the proton-decay partial width of the 4^+ resonance at $E_x = 5.130$ MeV was erroneously calculated by using an $l = 2$ rather than an $l = 4$ angular momentum transfer. The correct value has been recalculated by using the appropriate $l = 4$, which reduces the proton-decay partial width to $\Gamma_p < 1.25 \times 10^{-4}$ eV due to the increase in the centrifugal barrier. This eliminates the contribution of such a resonance to the total $^{29}\text{P}(p, \gamma)^{30}\text{S}$ reaction rate.

At the time the original paper was published, an additional 3^+ resonance at 5218.8(3) keV was reported by Lotay *et al.* [1]. We have included this resonance in the calculation of the updated $^{29}\text{P}(p, \gamma)^{30}\text{S}$ reaction rate.

We have recalculated the $^{29}\text{P}(p, \gamma)^{30}\text{S}$ reaction rate by using an updated Q value of 4.3956 MeV [2] instead of the previously used $Q = 4.3993$ MeV. The revised Q -value affects the resonance energies.

These modifications together leave the $^{29}\text{P}(p, \gamma)^{30}\text{S}$ reaction rate almost unchanged with respect to our published rate. The main changes are at temperatures lower than 0.4 GK where variations with the original published rate are less than 30%. At temperatures greater than 0.4 GK, the rate stays within 10% of the previously published values. The updated rate is given in Table I.

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TABLE I. Recalculated $^{29}\text{P}(p, \gamma)^{30}\text{S}$ reaction rate. The rate is calculated with an updated Q value of 4.3956 MeV [2], an additional 3^+ resonance at 5.2188 MeV reported in Ref. [1], and a corrected proton width for the 4^+ resonance at 5.130 MeV.

T_9 (GK)	Rate ($\text{cm}^3 \text{mol}^{-1} \text{s}^{-1}$)
0.1	7.12×10^{-13}
0.15	2.57×10^{-8}
0.2	4.41×10^{-6}
0.25	9.78×10^{-5}
0.3	8.39×10^{-4}
0.35	4.24×10^{-3}
0.4	1.52×10^{-2}
0.5	9.62×10^{-2}
0.6	3.34×10^{-1}
0.7	8.08×10^{-1}
0.8	1.56
0.9	2.61
1	3.96
1.5	1.60×10^1
2	3.68×10^1
2.5	6.26×10^1
3	8.89×10^1
3.5	1.13×10^2
4	1.35×10^2
5	1.74×10^2
6	2.10×10^2
7	2.44×10^2
8	2.80×10^2
9	3.14×10^2
10	3.48×10^2

[1] G. Lotay *et al.*, Phys. Rev. C **86**, 042801 (2012).

[2] M. Wang *et al.*, Chin. Phys. C **36**, 1603 (2012).