

**Erratum: Quasi-classical calculations of blackbody-radiation-induced depopulation rates and effective lifetimes of Rydberg  $nS$ ,  $nP$ , and  $nD$  alkali-metal atoms with  $n \leq 80$  [Phys. Rev. A **79**, 052504 (2009)]**

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We have found that zero-temperature lifetimes of Rb  $nP_{3/2}$  states were calculated incorrectly, as we accidentally lost the spontaneous transitions to the lower  $4D_{3/2,5/2}$  states in our computation code. This resulted in the overestimation of zero-temperature lifetimes of Rb  $nP_{3/2}$  states by 13%. The effective lifetimes at 300 K were thus overestimated by less than 5%.

Below we present the corrected numerical data for effective lifetimes of Rb  $nP_{3/2}$  states, which should be used instead of those reported in Table VII.

We have also calculated the new coefficients  $\tau_s=2.221\ 35$  and  $\delta=3.002\ 56$ , which should be used for Rb  $nP_{3/2}$  states in Eq. (15), instead of those reported in Table II. Zero-temperature and effective lifetimes of all other alkali-metal Rydberg states and the rates of BBR-induced depopulation rates of Rb  $nP_{3/2}$  states were calculated correctly.

The above corrections do not affect the conclusions of the paper.

TABLE VII. Effective lifetimes  $\tau_{eff}$  ( $\mu s$ ) of Rb  $nP_{3/2}$  Rydberg states.

$n$	10	15	20	25	30	35	40	45
$T=0$ K	0.9994	4.4133	12.003	25.491	46.497	76.549	117.62	171.34
$T=77$ K	0.99702	4.2420	10.965	22.139	38.476	60.510	88.957	124.21
$T=300$ K	0.92246	3.4228	7.9749	14.784	23.926	35.431	49.403	65.844
$T=600$ K	0.79419	2.6378	5.7165	10.056	15.651	22.491	30.606	39.985
$n$	50	55	60	65	70	75	80	
$T=0$ K	239.23	321.76	422.88	543.27	684.24	848.00	1042.6	
$T=77$ K	166.53	215.72	273.09	338.39	411.67	493.32	585.48	
$T=300$ K	84.742	105.98	129.84	156.20	185.02	216.37	250.60	
$T=600$ K	50.618	62.462	75.611	90.020	105.68	122.60	140.90	