

$^{82}\text{Se}(\text{p,p}),(\text{p,n})$  IAR 1968Ba23,1968Zi03,1977Ta09

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 125, 201 (2015)	31-Dec-2014

**1968Ba23:** (p,p) and (p,n) reactions,  $E(\text{p})=3.0 - 4.75$  MeV. Measured  $\sigma(E)$  with three silicon surface-barrier detectors (FWHM $\approx$ 35 keV) at  $\theta=90^\circ$ ,  $125^\circ$ , and  $150^\circ$  for protons and  $^3\text{He}$  proportional counter for neutrons; deduced  $\Gamma$ .

**1968Zi03:** (p,n) reaction,  $E(\text{p})=4.1 - 5.8$  MeV. Measured  $\sigma(E)$  with  $^3\text{He}$  proportional counter; deduced  $\Gamma$ .

**1977Ta09:** (p,p) and (p,p') reactions,  $E(\text{p})=4.5 - 7.7$  MeV. Measured  $\sigma(E,\theta)$  using solid state barrier detectors at  $70^\circ$ ,  $90^\circ$ ,  $120^\circ$ , and  $150^\circ$ ; deduced  $\Gamma$ .

 $^{83}\text{Br}$  Levels

E(level) <sup>†</sup>	$J^\pi$ <sup>‡</sup>	$\Gamma$ <sup>#</sup>	S <sup>@</sup>	Comments
S(p)+4861 21		28 keV 6		E(level): analog of $^{83}\text{Se}$ 360 level. $\Gamma$ : from 1968Zi03.
S(p)+4917 7		25 keV 6		E(level): analog of $^{83}\text{Se}$ 430 level. $\Gamma$ : from 1968Zi03.
S(p)+5079 6	1/2 <sup>+</sup>	38 keV 1	0.37	E(level): analog of $^{83}\text{Se}$ 539 level.
S(p)+5121 6	5/2 <sup>+</sup>	37 keV 2	0.47	E(level): analog of $^{83}\text{Se}$ 582 level.
S(p)+5400				E(level): seen by 1968Zi03 only. Probably doublet, analog of $^{83}\text{Se}$ 822 level and 963 level.
S(p)+5640 7	(5/2) <sup>+</sup>	45 keV 11	0.14	E(level): analog of $^{83}\text{Se}$ 1100 level. $J^\pi$ : the analog $^{83}\text{Se}$ 1100 level has $J^\pi=3/2^+$ from vector-analyzing power of (pol d,p).
S(p)+5903 10	5/2 <sup>+</sup>	14 keV 2	0.034	E(level): analog of $^{83}\text{Se}$ 1330 level.
S(p)+6233 10	5/2 <sup>+</sup>	33 keV 2	0.056	E(level): analog of $^{83}\text{Se}$ 1665 level.
S(p)+6267? 10	1/2 <sup>+</sup>	32 keV 1	0.088	E(level): analog of $^{83}\text{Se}$ 1710 level.
S(p)+6917 10	5/2 <sup>+</sup>	20 keV 6	0.05	E(level): analog of $^{83}\text{Se}$ 2314 level.
S(p)+7056 10	(3/2) <sup>+</sup>	58 keV 3	0.68	E(level): analog of $^{83}\text{Se}$ 2536 level.
S(p)+7075 10	(1/2) <sup>+</sup>	64 keV 4	0.13	E(level): no analog in $^{83}\text{Se}$ was found.
S(p)+7341 10	5/2 <sup>+</sup>	23 keV 4	0.05	E(level): analog of $^{83}\text{Se}$ 2858 level.
S(p)+7460 10				E(level): analog of $^{83}\text{Se}$ 3023 level.
S(p)+7531 10	5/2 <sup>+</sup>	42 keV 22	0.07	E(level): analog of $^{83}\text{Se}$ 3106 level.

<sup>†</sup> For E(level)<S(p)+5.7 MeV, weighted average of 1968Ba23, 1968Zi03, and 1977Ta09. For E(level)>S(p)+5.7 MeV, resonances are only observed by 1977Ta09.

<sup>‡</sup> From angular distribution, determined from  $^{82}\text{Se}(\text{p,p}')^{82}\text{Se}$  (0.655 MeV 2+) by 1977Ta09.

<sup>#</sup> Weighted average of  $\Gamma(\text{tot})$  of 1968Ba23, 1968Zi03, and 1977Ta09, except where noted. For E(level)>S(p)+5.7 MeV,  $\Gamma$  from 1977Ta09.

<sup>@</sup> From Breit-Wigner resonance formula plus DWBA background by 1977Ta09. S is extracted from elastic scattering.