

$^{31}\text{P}(e,e')$  **1975KI03,1965Ko03**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh		NDS 184, 29 (2022)	24-Jun-2022

Target  $J^\pi(^{31}\text{P g.s.})=1/2^+$ .

**1975KI03**: E=49.6-110.6, 250 MeV from Stanford university 1.2 GeV Mark III electron linear accelerator and the 140 MeV electron linear accelerator at the National Bureau of Standards Center for Radiation Research. Measured momentum spectra of scattered electrons from 34-90 degrees in 2 degree steps for E(e)=250 MeV with a doublet-focusing magnetic spectrometer. Deduced levels, transition strengths. Mainly 1270, 2230 and 3510 levels were investigated in this study.

**1965Ko03**: E=130,180 MeV from Orsay linear accelerator. NaI detectors for scattered electrons. Form factors measured and reduced transition probabilities deduced.

Others: **1997We01**, **1984Mi14**, **1972Si38**, **1972Si44**, **1971SiYF**, **1963Ba19**, **1963Lo06**.

 $^{31}\text{P}$  Levels

E(level) <sup>†</sup>	J <sup>π</sup> #	Comments
0	1/2 <sup>+</sup>	
1270 <sup>‡</sup>	3/2 <sup>+</sup>	B(E2) <sup>†</sup> =0.0072 8 B(E2) <sup>†</sup> : weighted average of 0.0073 8 ( <b>1965Ko03</b> ) and 0.0069 11 from B(E2)(W.u.)=6.0 9 ( <b>1975KI03</b> ).
2230 <sup>‡</sup>	5/2 <sup>+</sup>	B(E2) <sup>†</sup> =0.0116 9 B(E2) <sup>†</sup> : weighted average of 0.0097 11 ( <b>1965Ko03</b> ) and 0.0120 5 from B(E2)(W.u.)=6.3 3 ( <b>1975KI03</b> ).
3.10×10 <sup>3</sup> 20 3470 60	3/2 <sup>+</sup> &7/2 <sup>+</sup>	B(E2) <sup>†</sup> ≤0.0015 ( <b>1965Ko03</b> ) B(E2) <sup>†</sup> =0.0039 8 B(E4) <sup>†</sup> =51×10 <sup>-8</sup> 6 ( <b>1965Ko03</b> ) E(level): doublet of 3415, 7/2 <sup>+</sup> and 3506, 3/2 <sup>+</sup> levels in Adopted Levels. Other: 3510 ( <b>1975KI03</b> ). B(E2) <sup>†</sup> : unweighted average of 0.0047 6 ( <b>1965Ko03</b> ) and 0.0031 4 from B(E2)(W.u.)=2.7 3 ( <b>1975KI03</b> ).
4200 60	3/2 <sup>+</sup> &5/2 <sup>+</sup>	B(E2) <sup>†</sup> =0.0018 3 ( <b>1965Ko03</b> ) E(level): doublet of 4191, 5/2 <sup>+</sup> and 4260, 3/2 <sup>+</sup> levels in Adopted Levels. Other: 4260 ( <b>1975KI03</b> ).
4.56×10 <sup>3</sup> 15	7/2 <sup>-</sup>	B(E3) <sup>†</sup> =17×10 <sup>-6</sup> 2 ( <b>1965Ko03</b> ) E(level): other: 4430 ( <b>1975KI03</b> ).
4780 <sup>‡</sup> 5.00×10 <sup>3</sup> 15		B(E2) <sup>†</sup> =0.0024 4 ( <b>1965Ko03</b> ) B(E4) <sup>†</sup> =0.00023 3 ( <b>1965Ko03</b> ) E(level): multiplet of three known levels in 5015-5116 region, E4 excitation is only possible if 5342, 9/2 <sup>+</sup> is also present in this multiplet. Other: 5020 ( <b>1975KI03</b> ). <a href="#">Additional information 1.</a>
5340 <sup>‡</sup> 5670 70		B(E3) <sup>†</sup> =0.0018 3 ( <b>1965Ko03</b> )
6380 <sup>‡</sup> 6.55×10 <sup>3</sup> 15 7140 <sup>‡</sup>		B(E2) <sup>†</sup> =0.0047 7 ( <b>1965Ko03</b> )

<sup>†</sup> From **1965Ko03**, unless otherwise noted.

<sup>‡</sup> From **1975KI03**.

# From Adopted Levels.