

$^{84}\text{Kr}(\text{d,p}),(\text{pol d,p})$ 1978De20,1974Br14

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen		NDS 116, 1 (2014)	31-Dec-2013

1978De20: (d,p) and (pol d,p) E=11-13 MeV. Measured protons, angular distributions and analyzing powers using broad-range magnetic spectrometer and emulsion plates for unpolarized beam giving FWHM=16 keV and Si detectors for polarized beam with FWHM=60 keV. Range of angles: 20°–90°. Enriched and natural targets. DWBA analysis.

1974Br14: E=11.0 MeV. Measured protons using Si(Li) detectors with FWHM=30 keV (energy uncertainty=10 keV), $\sigma(\theta)$ from 20°–160°. DWBA analysis.

 ^{85}Kr Levels

E(level) [†]	J ^{<i>π</i>b}	L ^{<i>c</i>}	S ^{<i>g</i>}	Comments
0.0	9/2 ⁺	4	0.136	
305.6 <i>11</i>	1/2 ⁻	1	0.075	
1002?				
1107.9 ^{<i>a</i>} <i>8</i>		1	0.102,0.043	
1140.3 <i>8</i>	5/2 ⁺	2	0.572	E(level): 1136 In 1974Br14 .
1337? ^{<i>‡</i>} <i>15</i>				
1430.1 <i>9</i>	1/2 ⁺	0	0.380	
1874.0 <i>14</i>	(5/2) ⁺	2	(0.005)	
2055.1 <i>9</i>	3/2 ⁺	2	0.089	
2369? ^{<i>@</i>} <i>10</i>				
2513.4 <i>16</i>		(2) ^{<i>e</i>}		
2534.3 ^{<i>a</i>} <i>19</i>				
2573.7 ^{<i>a</i>} <i>22</i>				
2593 <i>4</i>				
2617.9 ^{<i>a</i>} <i>20</i>				
2742.1 <i>12</i>		0	0.066	
2797.7 ^{<i>a</i>} <i>12</i>		2	0.016	
2845.1 <i>12</i>	(5/2) ⁺	2	0.057	E(level): 2848 In 1974Br14 , possibly 2845.1+2866.4.
2866.4 <i>14</i>		0	0.074	L: 0 for 2848 group (1974Br14).
3060.9 <i>13</i>	3/2 ⁺	2	0.226	
3079.4? <i>18</i>		2	0.163,0.106	E(level): 3055 In 1974Br14 , possibly 3060.9+3079.4.
3113.9 <i>15</i>	1/2 ⁺	0	0.083	
3153.5 ^{<i>a</i>} <i>22</i>		0	0.016	
3285.1 <i>19</i>		(0)	0.121	
3300.4 <i>21</i>		(4,5)		
3320.4 <i>21</i>		4	0.070,0.036	E(level): 3326 In 1974Br14 , possibly 3300.4+3320.4+3340.6.
3340.6 <i>19</i>		2	0.026,0.016	L: 2 for 3326 group (1974Br14).
3355.8 ^{<i>a</i>} <i>19</i>		(0)	0.015	
3402.0 ^{<i>#</i>} <i>18</i>		(4,0) ^{<i>#</i>}		L: 4 for 3390 group (1974Br14).
3420.2 ^{<i>#</i>} <i>19</i>		(4,0) ^{<i>#</i>}		E(level): 3390 In 1974Br14 , possibly 3402.0+3420.2.
3470.6 ^{<i>#</i>} <i>17</i>		(4,5) ^{<i>#</i>}		
3545.9 <i>22</i>				
3575.4 <i>24</i>		2	0.034,0.020	E(level): 3565 In 1974Br14 , possibly 3545.9+3574.4.
3592.2 ^{<i>a</i>} <i>23</i>		2	0.024,0.014	
3638.0 <i>17</i>		0	0.020	
3729 <i>3</i>		0 ^{<i>d</i>}	0.024	L: 2 for 3717 group (1974Br14).
3745 ^{<i>a</i>} <i>3</i>		2	0.021,0.013	
3802 <i>3</i>		2	0.027,0.016	
3872.8 <i>22</i>				
3912.1 <i>18</i>				E(level): 3896 In 1974Br14 , possibly 3872.8+3912.1. L: 2 for 3896 group (1974Br14).

Continued on next page (footnotes at end of table)

$^{84}\text{Kr}(\text{d,p}),(\text{pol d,p})$ **1978De20,1974Br14 (continued)** ^{85}Kr Levels (continued)

E(level) [†]	L ^c	Comments
3927.1 20	0 ^f	
3945.3 20		E(level): 3928 In 1974Br14 , possibly 3927.1+3945.3.
3958? ^a		
3974.9 ^a 21		
4033.0 23	2 ^f	E(level): 4027 In 1974Br14 , could Be mixed with 4046.3 from 1978De20 .
4046.3 ^a 24		
4146 ^{&} 10	0 ^f	
4335 ^{&} 10	2 ^f	
4450 ^{&} 10	2 ^f	
4547 ^{&} 10	2 ^f	
4623 ^{&} 10		
4692 ^{&} 10		

[†] From [1978De20](#) unless otherwise stated. Note that [1974Br14](#) used reaction Q value lower by 4 keV for the $^{86}\text{Kr}(\text{d,p})$ reaction used for calibration purposes.

[‡] Level added by evaluators. Peak is present in proton spectra of [1978De20](#), and level is expected from γ -decay studies.

Weakly populated level.

@ Only from [1974Br14](#), not confirmed by [1978De20](#).

& Above 4.1 MeV excitation, levels are from [1974Br14](#) only.

^a Level in [1978De20](#) only.

^b From $\sigma(\theta)$ and vector analyzing power measurements ([1978De20](#)). Assignments for other levels follow from L-transfers.

^c Assignments from [1978De20](#) and [1974Br14](#) are in good agreement. L-values above 3.9 MeV are from [1974Br14](#).

^d Assigned L=2 by [1974Br14](#) but probably not resolved from L=2 transition to 2112 level in ^{87}Kr from $^{86}\text{Kr}(\text{d,p})$ (see [1978De20](#)).

^e From [1974Br14](#) but probably not resolved from 2534.3 level.

^f From [1974Br14](#) only.

^g From [1978De20](#). Values are given for L-1/2 and L+1/2. The agreement with those from [1974Br14](#) is only fair.