

²⁴Mg(⁵⁸Ni,3pγ) 1990Sk02

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 135, 193 (2016)	31-May-2016

1990Sk02: E=190 MeV. Measured γ, γγ, recoil-γγ.

⁷⁹Rb Levels

E(level) [†]	J ^π [‡]	E(level) [†]	J ^π [‡]	E(level) [†]	J ^π [‡]	E(level) [†]	J ^π [‡]
0.0 [#]	5/2 ⁺	679.26 ^{&} 20	(9/2 ⁻)	2507.2 [@] 4	(19/2 ⁺)	5456.6 ^{&} 7	(29/2 ⁻)
39.41 ^a 7	(3/2 ⁻)	1024.3 [?] 4	(9/2 ⁻)	2710.7 [?] 7	(17/2 ⁻)	6268.4 [#] 7	(33/2 ⁺)
96.78 [#] 21	9/2 ⁺	1049.18 ^a 24	(11/2 ⁻)	2766.0 ^a 5	(19/2 ⁻)	6335.5 [@] 13	(31/2 ⁺)
144.43 [?] 21	3/2 ⁻	1348.03 ^{&} 23	(13/2 ⁻)	3108.4 ^{&} 4	(21/2 ⁻)	6558 ^a 3	(31/2 ⁻)
146.56 [@] 20	(7/2 ⁺)	1351.9 [#] 3	(17/2 ⁺)	3453.8 [#] 4	(25/2 ⁺)	6891.0 ^{&} 10	(33/2 ⁻)
174.13 ^{&} 20	(5/2 ⁻)	1410.3 [?] 4	(11/2 ⁻)	3695.1 [@] 8	(23/2 ⁺)	7898 [@] 4	(35/2 ⁺)
363.50 [?] 24	(5/2 ⁻)	1452.4 [@] 3	(15/2 ⁺)	3875.5 ^a 7	(23/2 ⁻)	7954.4 [#] 9	(37/2 ⁺)
453.14 ^a 17	(7/2 ⁻)	1816.8 [?] 5	(13/2 ⁻)	4197.1 ^{&} 5	(25/2 ⁻)	8121 ^a 4	(35/2 ⁻)
597.0 [#] 3	13/2 ⁺	1820.7 ^a 4	(15/2 ⁻)	4768.8 [#] 5	(29/2 ⁺)	8360.0 ^{&} 23	(37/2 ⁻)
643.03 [@] 22	(11/2 ⁺)	2162.9 ^{&} 3	(17/2 ⁻)	4947.4 [@] 10	(27/2 ⁺)	8480.0 23	(37/2 ⁻)
670.2 [?] 3	(7/2 ⁻)	2313.4 [#] 4	(21/2 ⁺)	5134.9 ^a 16	(27/2 ⁻)	9813.5 [#] 22	(41/2 ⁺)

[†] From least-squares fit to E_γ data.

[‡] From Adopted Levels.

[#] Band(A): 3/2[431] band, α=+1/2.

[@] Band(B): 3/2[431] band, α=-1/2.

[&] Band(C): K^π=3/2⁻ band, α=+1/2.

^a Band(D): K^π=3/2⁻ band, α=-1/2.

γ(⁷⁹Rb)

E _γ	I _γ	E _i (level)	J _i ^π	E _f	J _f ^π
39.41 [‡] 7		39.41	(3/2 ⁻)	0.0	5/2 ⁺
49.7 3		146.56	(7/2 ⁺)	96.78	9/2 ⁺
96.6 3		96.78	9/2 ⁺	0.0	5/2 ⁺
105.2 3		144.43 [?]	3/2 ⁻	39.41	(3/2 ⁻)
134.2 3		174.13	(5/2 ⁻)	39.41	(3/2 ⁻)
144.1 4		144.43 [?]	3/2 ⁻	0.0	5/2 ⁺
146.9 3		146.56	(7/2 ⁺)	0.0	5/2 ⁺
174		174.13	(5/2 ⁻)	0.0	5/2 ⁺
219.2 3		363.50 [?]	(5/2 ⁻)	144.43 [?]	3/2 ⁻
226.3 3	3.3 2	679.26	(9/2 ⁻)	453.14	(7/2 ⁻)
279.0 3	5.2 3	453.14	(7/2 ⁻)	174.13	(5/2 ⁻)
299.0 3		1348.03	(13/2 ⁻)	1049.18	(11/2 ⁻)
307.1 3		670.2 [?]	(7/2 ⁻)	363.50 [?]	(5/2 ⁻)
324.1 3		363.50 [?]	(5/2 ⁻)	39.41	(3/2 ⁻)
354.7 3		1024.3 [?]	(9/2 ⁻)	670.2 [?]	(7/2 ⁻)
356		453.14	(7/2 ⁻)	96.78	9/2 ⁺
386.4 4		1410.3 [?]	(11/2 ⁻)	1024.3 [?]	(9/2 ⁻)
406.5 6		1816.8 [?]	(13/2 ⁻)	1410.3 [?]	(11/2 ⁻)
413.9 2	25.5 4	453.14	(7/2 ⁻)	39.41	(3/2 ⁻)
453		453.14	(7/2 ⁻)	0.0	5/2 ⁺
496.5 2	32 3	643.03	(11/2 ⁺)	146.56	(7/2 ⁺)

Continued on next page (footnotes at end of table)

$^{24}\text{Mg}(^{58}\text{Ni},3\text{p}\gamma)$ 1990Sk02 (continued) $\gamma(^{79}\text{Rb})$ (continued)

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
500.2 2	117.4 15	597.0	13/2 ⁺	96.78	9/2 ⁺
504.9 2	40.2 6	679.26	(9/2 ⁻)	174.13	(5/2 ⁻)
525.5 4		670.2?	(7/2 ⁻)	144.43?	3/2 ⁻
532.9 3	5.0 5	679.26	(9/2 ⁻)	146.56	(7/2 ⁺)
546.2 3	20.8 7	643.03	(11/2 ⁺)	96.78	9/2 ⁺
596.1 2	24.9 7	1049.18	(11/2 ⁻)	453.14	(7/2 ⁻)
660.1 5		1024.3?	(9/2 ⁻)	363.50?	(5/2 ⁻)
668.7 2	44.1 9	1348.03	(13/2 ⁻)	679.26	(9/2 ⁻)
705.0 3	2.1 3	1348.03	(13/2 ⁻)	643.03	(11/2 ⁺)
739.8 3		1410.3?	(11/2 ⁻)	670.2?	(7/2 ⁻)
754.9 1	100.0 10	1351.9	(17/2 ⁺)	597.0	13/2 ⁺
771.5 3	19.6 6	1820.7	(15/2 ⁻)	1049.18	(11/2 ⁻)
792.4 4		1816.8?	(13/2 ⁻)	1024.3?	(9/2 ⁻)
809.4 2	26.2 9	1452.4	(15/2 ⁺)	643.03	(11/2 ⁺)
814.9 2	37 3	2162.9	(17/2 ⁻)	1348.03	(13/2 ⁻)
855.4 4	15.4 24	1452.4	(15/2 ⁺)	597.0	13/2 ⁺
893.9 5		2710.7?	(17/2 ⁻)	1816.8?	(13/2 ⁻)
945.3 3	14.9 14	2766.0	(19/2 ⁻)	1820.7	(15/2 ⁻)
945.5 2	28 3	3108.4	(21/2 ⁻)	2162.9	(17/2 ⁻)
961.5 2	73.7 10	2313.4	(21/2 ⁺)	1351.9	(17/2 ⁺)
1054.8 3	18.4 8	2507.2	(19/2 ⁺)	1452.4	(15/2 ⁺)
1088.7 3	19.5 25	4197.1	(25/2 ⁻)	3108.4	(21/2 ⁻)
1109.5 4	10.6 11	3875.5	(23/2 ⁻)	2766.0	(19/2 ⁻)
1140.4 2	57.4 10	3453.8	(25/2 ⁺)	2313.4	(21/2 ⁺)
1187.9 6	12.0 13	3695.1	(23/2 ⁺)	2507.2	(19/2 ⁺)
1252.2 6	6.5 10	4947.4	(27/2 ⁺)	3695.1	(23/2 ⁺)
1259.4 14		5134.9	(27/2 ⁻)	3875.5	(23/2 ⁻)
1259.4 5	11.8 17	5456.6	(29/2 ⁻)	4197.1	(25/2 ⁻)
1315.0 3	25.6 8	4768.8	(29/2 ⁺)	3453.8	(25/2 ⁺)
1388.1 9	4.5 15	6335.5	(31/2 ⁺)	4947.4	(27/2 ⁺)
1423 2		6558	(31/2 ⁻)	5134.9	(27/2 ⁻)
1434.4 7		6891.0	(33/2 ⁻)	5456.6	(29/2 ⁻)
1469 2		8360.0	(37/2 ⁻)	6891.0	(33/2 ⁻)
1499.6 4	11.1 8	6268.4	(33/2 ⁺)	4768.8	(29/2 ⁺)
1563 3		7898	(35/2 ⁺)	6335.5	(31/2 ⁺)
1563 2		8121	(35/2 ⁻)	6558	(31/2 ⁻)
1589 [†] 2		8480.0	(37/2 ⁻)	6891.0	(33/2 ⁻)
1686.0 5	4.0 7	7954.4	(37/2 ⁺)	6268.4	(33/2 ⁺)
1859 2		9813.5	(41/2 ⁺)	7954.4	(37/2 ⁺)

[†] Placement from 1995Su27 and 1996Sm07. From $\gamma\gamma$ coin data, 1996Sm07 established that 1469 γ and 1589 γ are not in $\gamma\gamma$ coin as required by the level scheme of 1990Sk02.

[‡] From Adopted Gammas.

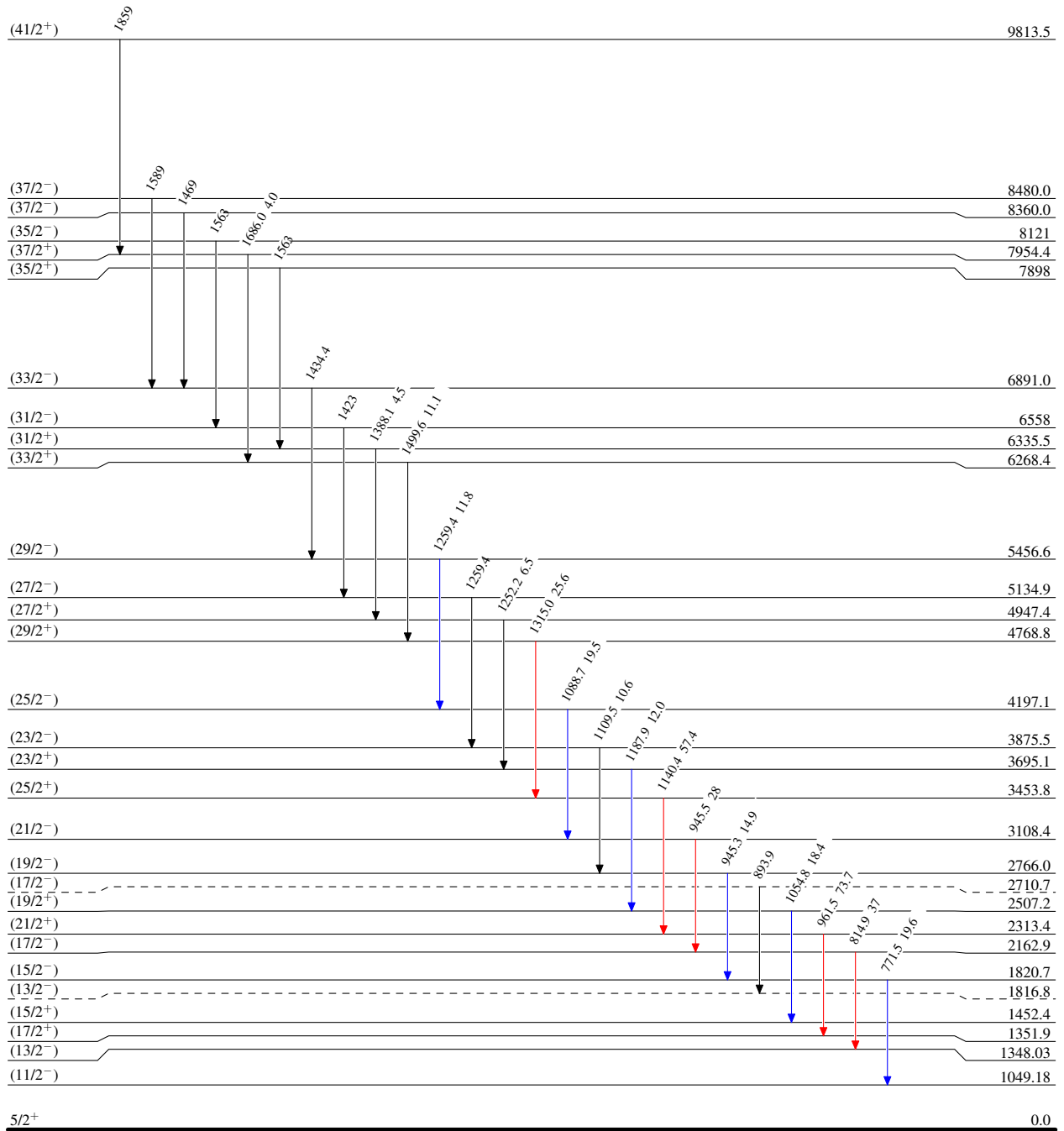
$^{24}\text{Mg}(^{58}\text{Ni},\text{p}\gamma)$ 1990Sk02

Level Scheme

Intensities: Relative I_γ

Legend

- $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
- $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
- $I_\gamma > 10\% \times I_\gamma^{\text{max}}$

 $^{79}\text{Rb}_{42}$

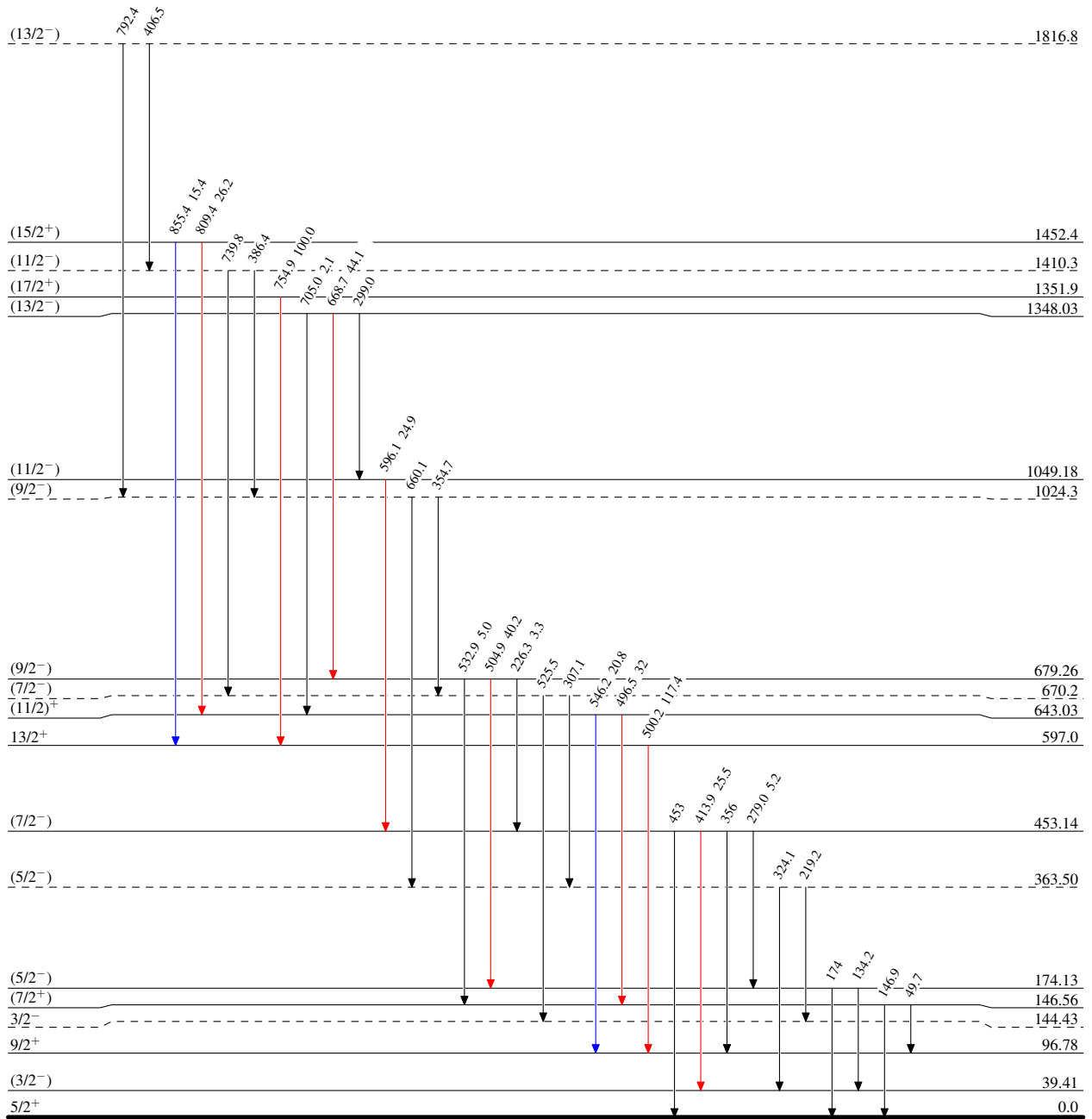
²⁴Mg(⁵⁸Ni,3pγ) 1990Sk02

Level Scheme (continued)

Intensities: Relative I_γ

Legend

- I_γ < 2% × I_γ^{max}
- I_γ < 10% × I_γ^{max}
- I_γ > 10% × I_γ^{max}

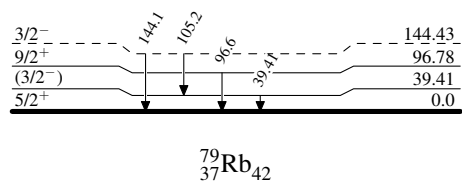


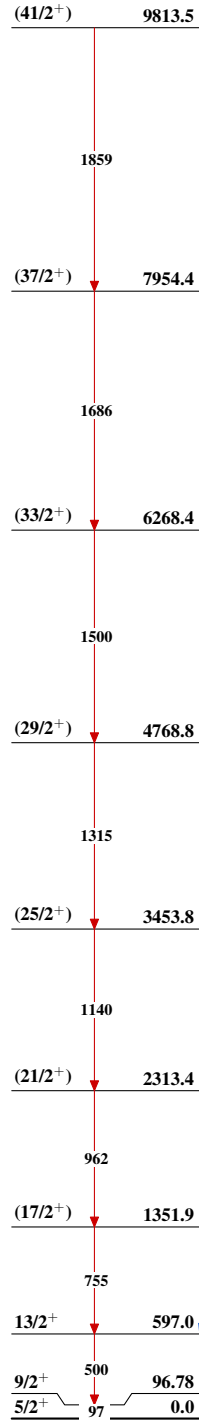
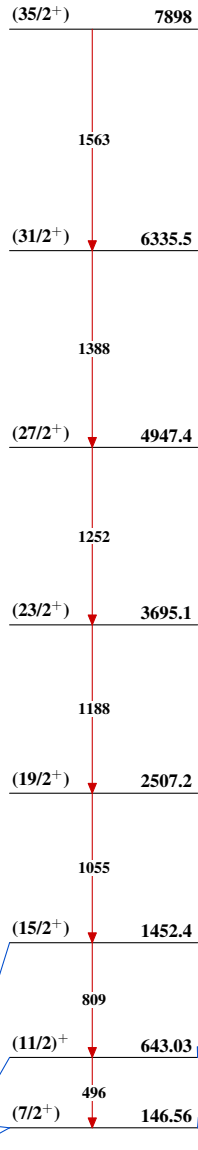
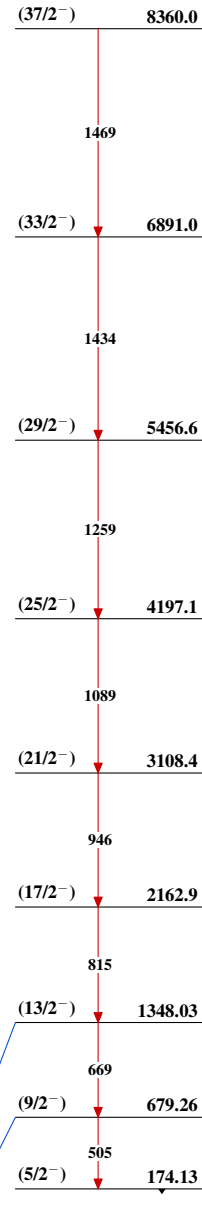
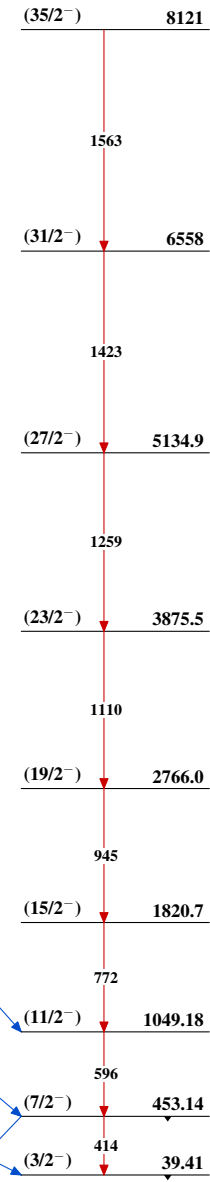
⁷⁹Rb₄₂

$^{24}\text{Mg}(^{58}\text{Ni},3\text{p}\gamma)$ 1990Sk02

Level Scheme (continued)

Intensities: Relative I_γ



$^{24}\text{Mg}(^{58}\text{Ni},3\text{p}\gamma)$ 1990Sk02Band(A): $3/2[431]$ band,
 $\alpha=+1/2$ Band(B): $3/2[431]$ band,
 $\alpha=-1/2$ Band(C): $K^\pi=3/2^-$ band,
 $\alpha=+1/2$ Band(D): $K^\pi=3/2^-$ band,
 $\alpha=-1/2$  $^{79}\text{Rb}_{37}^{42}$