

⁷⁶Ge(³⁵Cl, α 3n γ) 2004Da14

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 108,2035 (2007)	30-Mar-2007

E=132 MeV. Measured E γ , I γ , $\gamma\gamma$, $\gamma\gamma(\theta)$ (DCO), $\gamma\gamma(\theta)$ (lin pol), lifetimes by DSAM with an array of 8 Compton-suppressed Clover detectors.

¹⁰⁴Ag Levels

E(level) [†]	J π	E(level) [†]	J π	T _{1/2}	E(level) [†]	J π	T _{1/2}
0.0	5 ⁺	1598.1 [#] 13	(10 ⁻)		4328.1 [#] 17	(16 ⁻)	0.24 ps 4
112.7 8	6 ⁺	1930.9 [#] 14	(11 ⁻)		4423.3 ^{&} 17	14 ⁺	
212.3 8	7 ⁺	2180.3 [‡] 15	(11 ⁺)		4623.0 [@] 22	(16 ⁻)	
285.3 [‡] 11		2374.9 [#] 15	(12 ⁻)		4784.5 ^{&} 17	15 ⁺	
479.9? 11	(7 ⁺)	2819.1 [#] 15	(13 ⁻)		4900.0 [#] 18	(17 ⁻)	
797.2? 10	(8 ⁺)	3039.9 [@] 16	(12 ⁻)		5164.7 ^{&} 18	16 ⁺	
960.5? 10	(6 ⁻)	3300.5 [#] 16	(14 ⁻)	0.21 ps 4	5528.1 [#] 18	(18 ⁻)	
1027.4? 10	(7 ⁻)	3350.0 [@] 16	(13 ⁻)		5570.7 ^{&} 20	17 ⁺	0.27 ps 5
1077.3 10	(8 ⁻)	3647.0 [@] 17	(14 ⁻)		6050.7 ^{&} 23	18 ⁺	0.21 ps 4
1118.3 11	(9 ⁺)	3807.9 [#] 16	(15 ⁻)	0.22 ps 4	6594.7 ^{&} 25	19 ⁺	0.194 ps 28
1252.4 13	(9 ⁻)	4096.0 [@] 19	(15 ⁻)		7158 ^{&} 3	20 ⁺	

[†] From least-squares fit to E γ 's, assuming 1 keV uncertainty for each E γ .

[‡] from figure 2 of 2004Da14; not listed in authors' table I.

[#] Band(A): Magnetic-rotational band. Probable configuration= $\pi g_{9/2} \otimes \nu h_{11/2}$.

[@] Band(B): Possible Magnetic-rotational band. Possible configuration= $\pi g_{9/2} \otimes \nu [(g_{7/2} d_{5/2})^2 (h_{11/2})]$.

[&] Band(C): Magnetic-rotational band. Possible configuration= $\pi g_{9/2} \otimes \nu [(g_{7/2} d_{5/2})^1 h_{11/2}^2]$ or $\pi g_{9/2} \otimes \nu [(g_{7/2} d_{5/2})^3 h_{11/2}^2]$.

$\gamma(^{104}\text{Ag})$

R(DCO)=I γ (150°,215°,325°, gate on 90°,255°,285°)/ I γ (90°,255°,285°, gate on 150°,215°,325°).

R(pdco)=(aN(90°)-N(0°))/(aN(90°)+N(0°)), where a is the correction term due to the asymmetry in response to the Clover segments; defined as: a=N(0°)(unpolarized)/N(90°) (unpolarized). Values for pdco ratios have been obtained from gates on $\Delta J=1$, dipole transitions, mainly the 175-keV gamma ray.

E γ	I γ	E _i (level)	J π _i	E _f	J π _f	Comments
50 [†]		1077.3	(8 ⁻)	1027.4? (7 ⁻)		
67 [†]		1027.4?	(7 ⁻)	960.5? (6 ⁻)		
73 [†]		285.3		212.3 7 ⁺		
100	65 6	212.3	7 ⁺	112.7 6 ⁺		
113	100 9	112.7	6 ⁺	0.0 5 ⁺		Initial level of 339 keV listed in table I of 2004Da14 seems to be a misprint.
175	78 3	1252.4	(9 ⁻)	1077.3 (8 ⁻)		
212	5.3 10	212.3	7 ⁺	0.0 5 ⁺		
280	4.1 10	1077.3	(8 ⁻)	797.2? (8 ⁺)		
297 [‡]	3.9 4	3647.0	(14 ⁻)	3350.0 (13 ⁻)		DCO=0.89 12 R(pdco)=-0.07 8.
310 [‡]	3.6 4	3350.0	(13 ⁻)	3039.9 (12 ⁻)		DCO=0.89 12
317	5.7 10	797.2?	(8 ⁺)	479.9? (7 ⁺)		
321	1.9 4	1118.3	(9 ⁺)	797.2? (8 ⁺)		

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$^{76}\text{Ge}(^{35}\text{Cl},\alpha 3n\gamma)$ **2004Da14 (continued)** $\gamma(^{104}\text{Ag})$ (continued)

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
333	47.6 20	1930.9	(11 ⁻)	1598.1	(10 ⁻)	DCO=0.94 4 R(pdco)=-0.08 4.
346	55.9 24	1598.1	(10 ⁻)	1252.4	(9 ⁻)	DCO=0.93 4 R(pdco)=-0.003 38.
361	4.2 5	4784.5	15 ⁺	4423.3	14 ⁺	DCO=1.06 12
367	7.9 10	479.9?	(7 ⁺)	112.7	6 ⁺	
380	8.3 6	5164.7	16 ⁺	4784.5	15 ⁺	DCO=0.99 10
406	12.0 9	5570.7	17 ⁺	5164.7	16 ⁺	DCO=0.96 8 R(pdco)=-0.09 7.
444@	47@ 3	2374.9	(12 ⁻)	1930.9	(11 ⁻)	DCO=0.93 3 R(pdco)=-0.02 3 for doublet.
444@	45@ 3	2819.1	(13 ⁻)	2374.9	(12 ⁻)	DCO=0.93 3 R(pdco)=-0.02 3 for doublet.
449‡	5.4 5	4096.0	(15 ⁻)	3647.0	(14 ⁻)	DCO=0.97 14
480	7.8 8	6050.7	18 ⁺	5570.7	17 ⁺	
481	33 3	3300.5	(14 ⁻)	2819.1	(13 ⁻)	
507	28.8 14	3807.9	(15 ⁻)	3300.5	(14 ⁻)	DCO=0.97 6 R(pdco)=-0.04 4.
520	20.1 13	4328.1	(16 ⁻)	3807.9	(15 ⁻)	DCO=0.94 7 R(pdco)=-0.08 6.
521	14.1 11	1598.1	(10 ⁻)	1077.3	(8 ⁻)	
527‡	4.0 4	4623.0	(16 ⁻)	4096.0	(15 ⁻)	
544	6.5 5	6594.7	19 ⁺	6050.7	18 ⁺	
563	5.8 4	7158	20 ⁺	6594.7	19 ⁺	
572	15.3 10	4900.0	(17 ⁻)	4328.1	(16 ⁻)	DCO=0.85 8 R(pdco)=-0.03 3.
585	4.1 8	797.2?	(8 ⁺)	212.3	7 ⁺	
628	8.3 7	5528.1	(18 ⁻)	4900.0	(17 ⁻)	Positive parities for initial and final levels as listed in table i of 2004Da14 seem to be misprints.
678	14.1 10	1930.9	(11 ⁻)	1252.4	(9 ⁻)	DCO=1.41 13 R(pdco)=+0.02 7.
742	3.6 4	1027.4?	(7 ⁻)	285.3		Initial level of 1078 keV listed in table I of 2004Da14 seems to be a misprint.
748	1.7 5	960.5?	(6 ⁻)	212.3	7 ⁺	
777	8.2 7	2374.9	(12 ⁻)	1598.1	(10 ⁻)	A ₂ =+0.108 68
815	7.6 10	1027.4?	(7 ⁻)	212.3	7 ⁺	DCO=1.01 9 Initial level of 1078 keV listed in table I of 2004Da14 seems to be a misprint.
828#	3.4 5	3647.0	(14 ⁻)	2819.1	(13 ⁻)	DCO=0.98 15 R(pdco)=-0.06 10.
848	6.0 8	960.5?	(6 ⁻)	112.7	6 ⁺	
865	30.0 20	1077.3	(8 ⁻)	212.3	7 ⁺	DCO=0.97 7 R(pdco)=+0.08 5.
888	15.5 12	2819.1	(13 ⁻)	1930.9	(11 ⁻)	DCO=1.36 13
906	7.0 10	1118.3	(9 ⁺)	212.3	7 ⁺	DCO=1.58 21
926	11.7 10	3300.5	(14 ⁻)	2374.9	(12 ⁻)	DCO=1.47 17 R(pdco)=+0.05 8.
975#	4.2 6	3350.0	(13 ⁻)	2374.9	(12 ⁻)	
989	12.0 11	3807.9	(15 ⁻)	2819.1	(13 ⁻)	DCO=1.42 16
1028	7.1 10	4328.1	(16 ⁻)	3300.5	(14 ⁻)	DCO=1.55 17 R(pdco)=+0.14 9.
1062†		2180.3	(11 ⁺)	1118.3	(9 ⁺)	
1092	4.7 6	4900.0	(17 ⁻)	3807.9	(15 ⁻)	DCO=1.60 23
1109#	4.0 5	3039.9	(12 ⁻)	1930.9	(11 ⁻)	DCO=0.95 12 R(pdco)=-0.06 12.

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$^{76}\text{Ge}(^{35}\text{Cl},\alpha 3n\gamma)$ 2004Da14 (continued) $\gamma(^{104}\text{Ag})$ (continued)

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
1200	3.6 ⁴	5528.1	(18 ⁻)	4328.1	(16 ⁻)	DCO=0.91 <i>12</i>
1357	6.0 ⁹	5164.7	16 ⁺	3807.9	(15 ⁻)	DCO=0.97 <i>20</i> R(pdco)=+0.10 <i>11</i> .
1484	10.9 <i>12</i>	4784.5	15 ⁺	3300.5	(14 ⁻)	DCO=0.88 <i>11</i> R(pdco)=+0.11 <i>9</i> .
1604	7.2 <i>10</i>	4423.3	14 ⁺	2819.1	(13 ⁻)	DCO=0.87 <i>14</i> R(pdco)=+0.13 <i>12</i> .

[†] From figure 2 of 2004Da14; not listed in authors' table I.

[‡] Initial and final level spins listed in table I of 2004Da14 are one unit higher than those in authors' figure 2; these seem to be misprints in table I. by one unit which seems to be a misprint.

[#] Initial level spin listed in table I of 2004Da14 is one unit higher than that in authors' figure 2; this seem to be a misprint in table I.

[@] Multiply placed with intensity suitably divided.

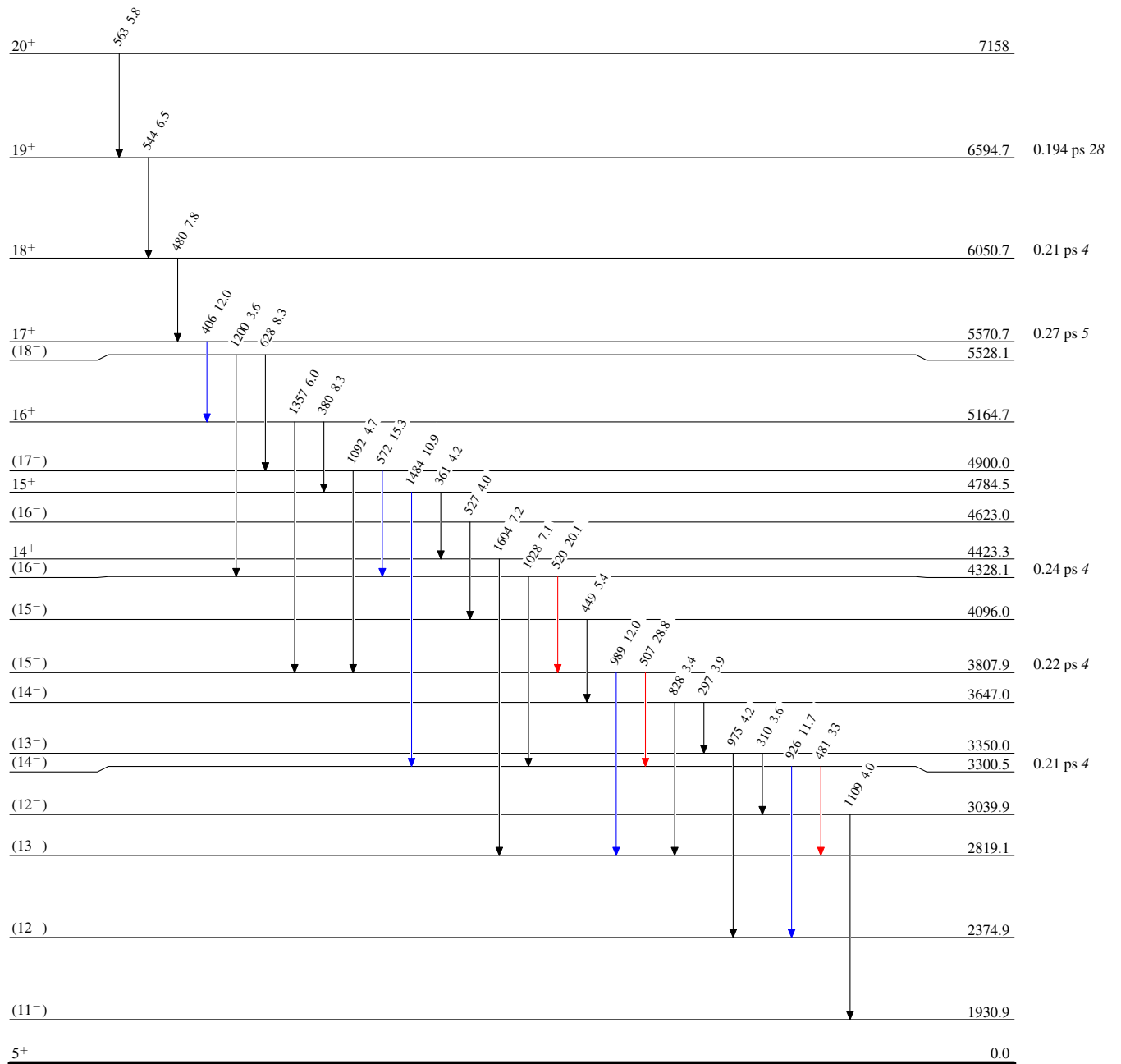
$^{76}\text{Ge}(^{35}\text{Cl},\alpha 3n\gamma)$ 2004Da14

Level Scheme

Intensities: Relative I_γ

Legend

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



$^{104}_{47}\text{Ag}_{57}$

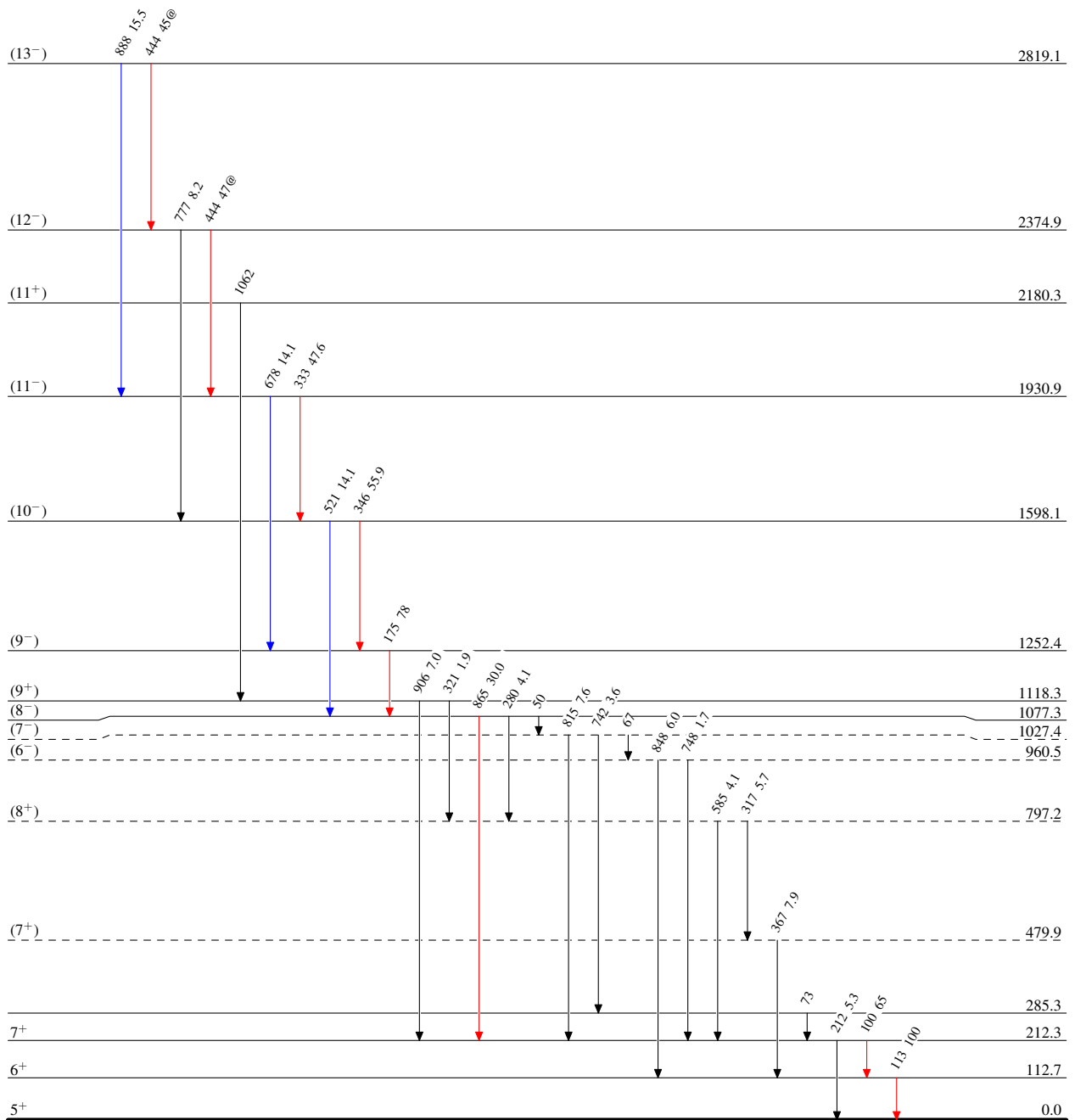
$^{76}\text{Ge}(\alpha, \alpha 3\gamma)$ 2004Da14

Level Scheme (continued)

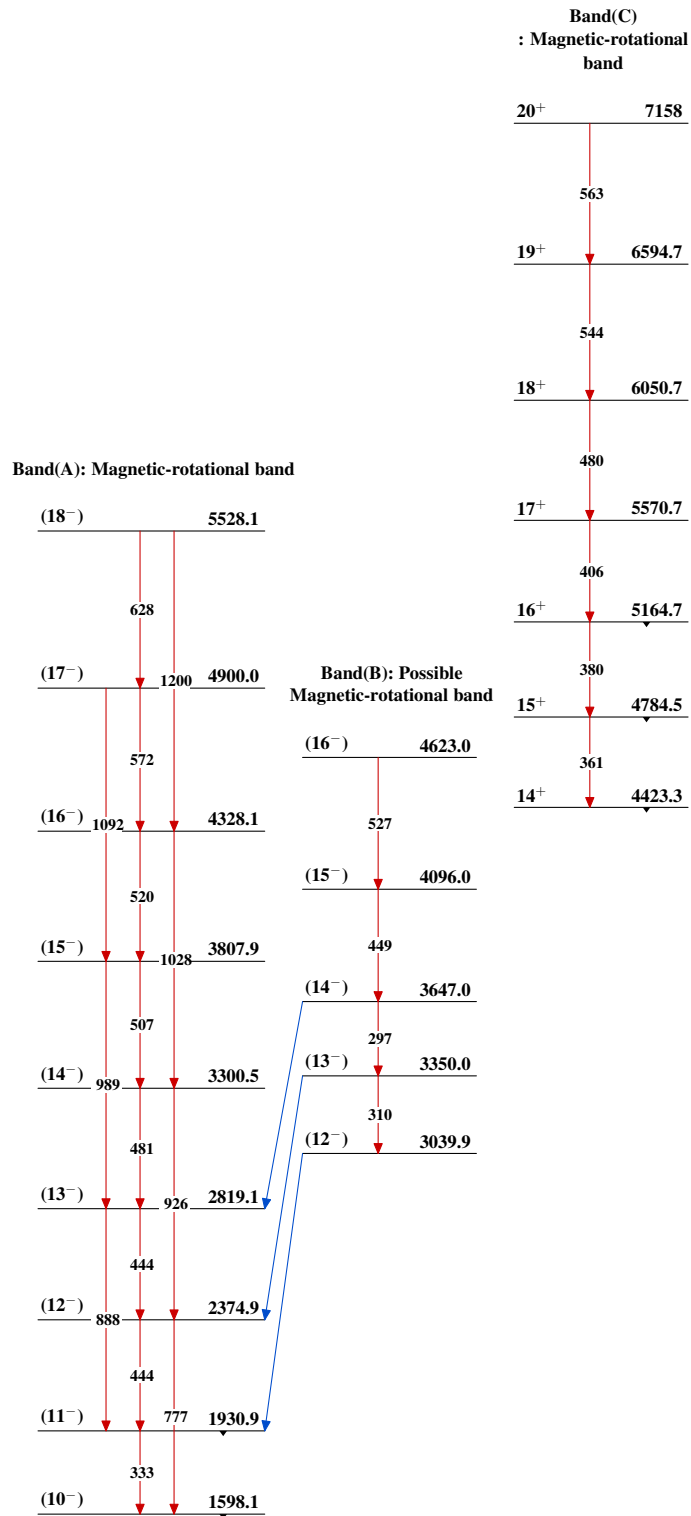
Intensities: Relative I_γ
@ Multiply placed: intensity suitably divided

Legend

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



$^{104}_{47}\text{Ag}_{57}$

$^{76}\text{Ge}(^{35}\text{Cl},\alpha 3n\gamma)$ 2004Da14 $^{104}_{47}\text{Ag}_{57}$