

Adopted Levels, Gammas

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Ninel Nica, John Cameron and Balraj Singh		NDS 113,1 (2012)	31-Dec-2011

$Q(\beta^-) = -12814.5$ 4; $S(n) = 15255.5$ 8; $S(p) = 8506.97$ 4; $Q(\alpha) = -6640.92$ 3 [2012Wa38](#)

Note: Current evaluation has used the following Q record -12814.21 35 15255.5 8 8506.99 5 -6640.92 3 [2011AuZZ](#).

$S(2n) = 27996.79$ 34, $S(2p) = 14877.82$ 6 ([2011AuZZ](#)).

Values in [2003Au03](#): $Q(\beta^-) = -12805$ 8, $S(n) = 15255.4$ 7, $S(p) = 8506.97$ 5, $Q(\alpha) = -6640.76$ 14, $S(2n) = 27997.0$ 4, $S(2p) = 14877.69$ 11.

In XREF table, levels populated in reactions labeled by XREF=Y:

$^1\text{H}(^{35}\text{Cl}, \alpha)$:res: 9117.

$^9\text{Be}(^{40}\text{Ca}, ^{13}\text{C}\gamma)$: 0, 1970.

$^{28}\text{Si}(^{32}\text{S}, ^{24}\text{Mg})$: 0, 1970.

$^{36}\text{Ar}(p, p'\gamma)$: 0, 1970.

$^{40}\text{Ca}(p, p\alpha), (p, p'\alpha)$: 0, 1970, 4414.

$^{40}\text{Ca}(\text{pol } p, p\alpha)$: 0, 1970.

$^{40}\text{Ca}(p, p\alpha\gamma)$: 0, 1970.

$^{40}\text{Ca}(\alpha, 2\alpha)$: 0, 1970, 4329.

$^{40}\text{Ca}(^{40}\text{Ca}, X)$: 0, 1970, 4414.

$^{197}\text{Au}(^{36}\text{Ar}, ^{36}\text{Ar}'\gamma)$: 0, 1970.

$^{206}\text{Pb}(^{36}\text{Ar}, ^{36}\text{Ar}'\gamma)$: 0, 1970.

^{36}Ar identified in mass spectrometer studies by F. W. Aston, Nature 105, 8 (1920).

The $^{35}\text{Cl}(p, \gamma), (p, p'), (p, \alpha)$:res dataset is abbreviated as $^{35}\text{Cl}(p, \gamma)$:res.

[2008ChZL](#): measurement of double β decay of ^{36}Ar .

[2011Le01](#): $^1\text{H}(^{36}\text{Ar}, d)$ $E = 33$ MeV/nucleon; measured $\sigma(\theta)$; deduced neutron ground-state spectroscopic factors.

 ^{36}Ar LevelsCross Reference (XREF) Flags

A	$^{36}\text{Cl } \beta^-$ decay (3.01×10^5 y)	M	$^{33}\text{S}(\alpha, n\gamma)$	Y	$^1\text{H}(^{35}\text{Cl}, \alpha)$:res
B	$^{36}\text{K } \varepsilon$ decay (342 ms)	N	$^{35}\text{Cl}(p, \gamma), (p, p'), (p, \alpha)$:res	Z	$^9\text{Be}(^{40}\text{Ca}, ^{13}\text{C}\gamma)$
C	$^{37}\text{Ca } \varepsilon p$ decay (181.1 ms)	O	$^{35}\text{Cl}(d, n\gamma)$	Others:	
D	$^{40}\text{Sc } \varepsilon \alpha$ decay (182.3 ms)	P	$^{35}\text{Cl}(^3\text{He}, d)$	AA	$^{28}\text{Si}(^{32}\text{S}, ^{24}\text{Mg})$
E	$^2\text{H}(^{35}\text{Cl}, n\gamma)$	Q	$^{36}\text{Ar}(e, e')$	AB	$^{36}\text{Ar}(p, p'\gamma)$
F	$^{12}\text{C}(^{32}\text{S}, ^8\text{Be})$	R	$^{36}\text{Ar}(p, p')$	AC	$^{40}\text{Ca}(p, p\alpha), (P, P'\alpha)$
G	$^{20}\text{Ne}(^{16}\text{O}, ^{16}\text{O}), (^{16}\text{O}, ^{12}\text{C})$:fusion	S	$^{36}\text{Ar}(d, d')$	AD	$^{40}\text{Ca}(\text{pol } P, Pa)$
H	$^{24}\text{Mg}(^{12}\text{C}, \alpha), (^{12}\text{C}, ^{12}\text{C})$:fusion	T	$^{36}\text{Ar}(\alpha, \alpha), (\alpha, \alpha')$	AE	$^{40}\text{Ca}(P, p\alpha\gamma)$
I	$^{24}\text{Mg}(^{20}\text{Ne}, 2\alpha\gamma)$	U	$^{38}\text{Ar}(p, t)$	AF	$^{40}\text{Ca}(\alpha, 2\alpha)$
J	$^{32}\text{S}(\alpha, \gamma)$:res	V	$^{39}\text{K}(p, \alpha)$	AG	$^{40}\text{Ca}(^{40}\text{Ca}, X)$
K	$^{32}\text{S}(^6\text{Li}, d)$	W	$^{40}\text{Ca}(d, ^6\text{Li})$	AH	$^{197}\text{Au}(^{36}\text{Ar}, ^{36}\text{Ar}'\gamma)$
L	$^{32}\text{S}(^{16}\text{O}, ^{12}\text{C})$	X	$^{40}\text{Ca}(^3\text{He}, ^7\text{Be})$	AI	$^{206}\text{Pb}(^{36}\text{Ar}, ^{36}\text{Ar}'\gamma)$

E(level) [†]	J $\pi^{\ddagger}$	T _{1/2}	XREF		Comments
0.0 ^d	0 ⁺ [#]	stable	ABCDEF	IJKLMNOPQRSTUVWXYZ	XREF: Others: AA , AB , AC , AD , AE , AF , AG , AH , AI Nuclear rms charge radius: 3.3902 fm 20 (2004An14 , evaluation); 3.3901 fm 23 from 2008 update of 2004An14 . Spin measurement by optical spectroscopy (1937Ko03 , 1953Me73).
1970.38 ^d 5	2 ⁺ [#]	328 fs 20	BC EF	IJKLMNOPQRSTUVWXYZ	XREF: Others: AA , AB , AC , AD , AE , AF , AG , AH , AI $\mu = +0.10$ 4 (2006Sp01 , 2011StZZ) $Q = +0.11$ 6 (1971Na06 , 1989Ra17 , 2011StZZ) μ : transient-field method (2006Sp01).

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Adopted Levels, Gammas (continued)

^{36}Ar Levels (continued)				
E(level) [†]	J ^π [‡]	T _{1/2}	XREF	Comments
				Q: measured by Coulomb excitation reorientation (1971Na06 , $^{206}\text{Pb}(^{36}\text{Ar}, ^{36}\text{Ar}'\gamma)$).
				T _{1/2} : weighted average (in fs) of: 310 <i>31</i> ($^9\text{Be}(^{40}\text{Ca}, ^{13}\text{C}\gamma)$), 341 <i>20</i> ($^{36}\text{Ar}(\text{e},\text{e}')$), 335 <i>27</i> ($^{197}\text{Au}(^{36}\text{Ar}, ^{36}\text{Ar}'\gamma)$), 305 <i>49</i> ($^{206}\text{Pb}(^{36}\text{Ar}, ^{36}\text{Ar}'\gamma)$), 319 <i>78</i> ($^{32}\text{S}(\alpha,\gamma):\text{res}$), 319 <i>28</i> ($^{35}\text{Cl}(\text{p},\gamma):\text{res}$); other: 450 <i>14</i> ($^{12}\text{C}(^{32}\text{S}, ^8\text{Be})$). 2001Ra27 evaluation gives adopted $\tau=463$ fs <i>46</i> or T _{1/2} =321 fs <i>32</i> .
4178.32 <i>11</i>	3 ⁻	2.3 ps <i>3</i>	BC EF IJKLMNOPQRSTU V X	B(E3)=0.0111 <i>11</i> (2002Ki06 evaluation), data from lifetime and (e,e').
4329.1 ^e <i>7</i>	(0,1,2) ⁺ [#]	>485 fs	C I KL N P S V	XREF: Others: AF
4414.40 ^d <i>16</i>	4 ⁺ [#]	76 fs <i>10</i>	EF I LMN P RST W	XREF: Others: AC , AG
4440.11 <i>19</i>	2 ⁺	76 fs <i>14</i>	B I LMN P UVWX	J ^π : π from 2699.4, M1+E2 γ from 3 ⁺ , 7140; L=4 in $^{40}\text{Ca}(\text{d}, ^6\text{Li})$.
4951.4 ^e <i>4</i>	2 ⁺ [#]	<35 fs	B F I KL N P V	
4974.05 <i>18</i>	2 ⁻	10 ps <i>3</i>	B E MN P RS V	
5171.13 <i>16</i>	5 ⁻	88 ps <i>3</i>	EF I KLMNOP S V	
5194.4 <i>8</i>	(0 ⁺ ,1 ⁺ ,2 ⁺ ,3 ⁻)	69 fs <i>21</i>	KL N P R V	
5836.0 <i>4</i>	1 ⁻	6.2 fs <i>21</i>	KL N P	
5856.65 <i>19</i>	3 ⁻	0.31 ps <i>10</i>	KL N P V	
5878? <i>9</i>	(2 ⁺)		RS V X	J ^π : from $^{36}\text{Ar}(\text{p},\text{p}')$.
5895.92 <i>19</i>	4 ⁻	0.35 ps <i>14</i>	MN V	
6136.5 ^e <i>15</i>	4 ⁺ [#]		I KLMN V	J ^π : E1 γ from 5 ⁻ , 9927 ($^{35}\text{Cl}(\text{p},\gamma):\text{res}$); E2 γ to 2 ⁺ , 1970 ($^{24}\text{Mg}(^{20}\text{Ne}, 2\alpha\gamma)$).
6217.3 <i>3</i>	5 ⁻	201 fs <i>35</i>	LMN R V	
6356.0 <i>6</i>	4 ⁺	0.31 ps <i>10</i>	N R V X	
6611.0 <i>3</i>	2 ⁺	15 fs <i>6</i>	B N P UV	T=1 J ^π : log ft=3.5 (^{36}K ε decay).
6645.6 <i>15</i>	(2 ⁺ ,3 ⁺ ,4 ⁺)		N V	
6724 <i>2</i>	NOT (2 ⁺) ⁺		N P x	J ^π : not 1 ⁺ ($^{35}\text{Cl}(\text{p},\gamma):\text{res}$) and (1,2) ⁺ from $^{35}\text{Cl}(^3\text{He},\text{d})$.
6731.0 <i>5</i>	1 ⁺ ,2 ⁺		B x	J ^π : log ft=5.11 from 2 ⁺ ; γ to 0 ⁺ .
6835.16 <i>19</i>	4 ⁻	0.56 ps <i>17</i>	E N P	
6836.50 <i>18</i>	3 ⁻	166 fs <i>42</i>	KL N	
6866.9 <i>7</i>	(1 ⁺ ,2 ⁺)		B L N P R V	E(level): 6868.5 <i>10</i> (1972Ho40), 6865.2 <i>10</i> (1974Jo02).
				J ^π : (1,2 ⁺) from $^{35}\text{Cl}(\text{p},\gamma):\text{res}$; $\pi=-$ from L=(0) in $^{35}\text{Cl}(^3\text{He},\text{d})$.
7136.5 <i>9</i>	(1 ⁻ ,2 ⁺)	9 fs <i>3</i>	N P	
7139.6 <i>4</i>	3 ⁺	69 fs <i>35</i>	B N	
7178.9 <i>4</i>	(1,2) ⁺		B N P V	J ^π : (1,2 ⁺) from $^{35}\text{Cl}(\text{p},\gamma):\text{res}$; $\pi=+$ from L=0 in $^{35}\text{Cl}(^3\text{He},\text{d})$.
7247.4 <i>6</i>	(1,2,3) ⁻	<21 fs	N P	J ^π : 0 ⁺ ,1,2,3,4 ⁺ from γ to 2 ⁺ , 1970; (1,2,3) ⁻ from $\pi=-$ ($^{35}\text{Cl}(^3\text{He},\text{d})$).
7258.6 <i>8</i>	3 ⁻	<14 fs	N R V	
7336.6 <i>6</i>	3 ⁺	10 fs <i>5</i>	B N P V	T=1
7353.9 <i>3</i>	6 ⁻	125 fs <i>28</i>	I MN V	
7432.3 <i>7</i>	1 ⁺	1.5 fs <i>3</i>	L N PQ V	J ^π ,T _{1/2} : from $^{36}\text{Ar}(\text{e},\text{e}')$.
7488 <i>16</i>	(2 ⁻)		QR V	E(level): weighted average of values from datasets.

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Adopted Levels, Gammas (continued) ^{36}Ar Levels (continued)

E(level) [†]	J ^π [‡]	T _{1/2}	XREF		Comments
7573.1 3	4 ⁻	159 fs 49	N	V	J ^π : from $^{36}\text{Ar}(e,e')$.
7672.1 6	(3) ⁻		L N P	V	J ^π : not(1,2) ⁻ from $^{35}\text{Cl}(p,\gamma)$:res and (2,3) ⁻ from $^{35}\text{Cl}(^3\text{He},d)$.
7706? 10	-		P		Seen only in $^{35}\text{Cl}(^3\text{He},d)$.
7710.3 5	1 ⁺		B N	V	J ^π : $\pi=-$ from L=1 in $^{35}\text{Cl}(^3\text{He},d)$. T=1 E(level): 7710.7 18 (1972Ho40), 7711.1 15 (1974Jo02).
7749.7 5	2 ⁻		L N PQR	V	J ^π : from $^{36}\text{Ar}(e,e')$.
7767.0 ^e 4	6 ⁺ [#]	76 fs 11	I M	V	E(level), T _{1/2} : from $^{24}\text{Mg}(^{20}\text{Ne}, 2\alpha\gamma)$. J ^π : $\Delta J=2$ E2 γ to 4 ⁺ 6137 (2 ⁺ less likely by no γ to 0 ⁺ g.s.).
7879 2	(1,2) ⁻		L N P	V	J ^π : not (1,3) ⁻ from $^{35}\text{Cl}(p,\gamma)$:res; $\pi=-$ from L=1 in $^{35}\text{Cl}(^3\text{He},d)$.
7971.4 7	1 ⁺ , 2 ⁺		B P R	V Y	XREF: Others: AD, AF, AG, AH, AI XREF: P(7965,8010). E(level): from ^{36}K ε decay. J ^π : 1 ⁺ , 2 ⁺ , 3 ⁺ from log ft=5.4 from 2 ⁺ parent (^{36}K ε decay); 3 ⁺ less likely from no γ to 0 ⁺ , g.s.
8015.9 10	(3,4) ⁻		N	VW Y	XREF: Others: AI XREF: V(8030,8070).
8131.9 6	1 ⁺	1.6 fs 4	B N PQ	V	T=1 E(level): from $^{36}\text{Ar}(e,e')$.
8231 16			L P	V	
8288 4			K M		
8303 3	2 ⁻		PQ	V	J ^π : from $^{36}\text{Ar}(e,e')$.
8332.5 15	(3) ⁻		N P		J ^π : from $^{35}\text{Cl}(^3\text{He},d)$.
8353 3	(1 ⁻ , 2 ⁺ , 3 ⁻)		B		J ^π : from ^{36}K ε decay (α -decayed level).
8365 3	2 ⁻		PQ		J ^π : from $^{36}\text{Ar}(e,e')$.
8398 3			B P		
8449 3	(⁻)		P		J ^π : L($^3\text{He},d$)=(1+3) from 3/2 ⁺ target.
8472.0 10	(3 ⁻ , 4 ⁻ , 5 ⁻)	30 fs 7	N P		
8504 3	1 ⁺	30 fs 7	K PQ		J ^π : from $^{36}\text{Ar}(e,e')$.
8556.3 10	2 ⁺		B P R U		T=1 J ^π : 1 ⁺ , 2 ⁺ from L($^3\text{He},d$)=0 from 3/2 ⁺ parent.
8593 4			M		
8672 3	(⁻)		K P		J ^π : from L=(1) in $^{35}\text{Cl}(^3\text{He},d)$.
8739 4			M R		
8806.4 18	(0 ⁻ , 1, 2, 3 ⁻)		N P		J ^π : from $^{35}\text{Cl}(^3\text{He},d)$.
8850 3			B		
8887 4	($\leq 5^-$)		P		J ^π : from $^{35}\text{Cl}(^3\text{He},d)$.
8909.1 9	2 ⁺		B JK		J ^π : $\Delta J=2$, E2 γ to 0 ⁺ , g.s.
8921.6 23			M P		
8938.8 5	(2 ⁺ , 3, 4 ⁻)		N P		
9014.9 10	(3 ⁻ , 4, 5 ⁻)		N P		
9024.8 8	2		B N		
9066.4 6	3 ⁻		N P		
9117.0 10	1 ⁻		J N	Y	J ^π : $\Delta J=1$, E1 γ to 0 ⁺ , g.s.
9132.5 7	3 ⁻		N Q		J ^π : from $^{35}\text{Cl}(p,\gamma)$:res; 2 ⁻ in $^{36}\text{Ar}(e,e')$.
9144.9 7	(2 ⁺ , 3 ⁻)		B N		
9186 ^d 4	(6 ⁺) [#]		I M		E(level): from $^{33}\text{S}(\alpha, n\gamma)$.

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Adopted Levels, Gammas (continued) ^{36}Ar Levels (continued)

E(level) [†]	J ^π [‡]	T _{1/2}	XREF		Comments
9192.1 11	(3 ⁻ ,4 ⁺)			N	J ^π : from $^{24}\text{Mg}(^{20}\text{Ne},2\alpha\gamma)$.
9220.2 11	1 ⁺		B	N R	T=1
9240.5 11	2 ⁻			K N Q	J ^π : from $^{36}\text{Ar}(\text{e},\text{e}')$.
9248.4 11	(1 ⁻ ,2 ⁻ ,3 ⁻)			N	
9258.3 12	3 ⁻			N	
9270? 40	(1 ⁺)			Q	
9300.1 4	4 ⁻			N P	T=1
9342.5 4	3 ⁻			N	T=1
9356.0 8	2 ⁺			J N	J ^π : from $^{32}\text{S}(\alpha,\gamma):\text{res.}$
9365.9 8	1 ⁻		B	N	
9374.1 13	(1 ⁻ ,2 ⁻ ,3 ⁻)			N	
9379.9 13	(2 ⁺ ,3 ⁺ ,4 ⁺)		B	N	
9393.4 10	(2 ⁺ ,3 ⁺ ,4 ⁺)			N	
9413.9 29				MN	
9439.2 14	(2 ⁺ ,3 ⁺ ,4 ⁺)			N	
9448.1 9	1 ⁻ ,2 ⁺ ,3 ⁻			J N	
9465.9 5	1 ⁻ ,2 ⁺		B	J N	
9474.0 8	(1,2)			N	
9494.3 12				N	
9502.8 5	(2,3)		B	N	J ^π : (2,3) from $^{35}\text{Cl}(\text{p},\gamma):\text{res.}$; 1 ⁺ ,2 ⁺ ,3 ⁺ from log ft=4.1 from 2 ⁺ parent (^{36}K ε decay).
9509.6 6	(2 ⁺ ,3 ⁺ ,4 ⁺)			N	
9542.0 11	(1,2,3) ⁻			N	
9550.3 5	(0 ⁺ to 4 ⁺)			N	
9574.3 4	4 ⁻			N	
9595.4 7	2 ⁺			N	
9606.8 5	(0,1,2) ⁻			N	
9667.1 10	3 ⁻			N	
9681.9 5	4 ⁺ ,6 ⁺			N	
9700 30	0 ⁺			N U	T=1
					J ^π : from agreement of experimental and calculated cross sections in (p,t).
9703.2 14	(1 ⁻ ,2 ⁺)		B		J ^π : from comparison of experimental and calculated cross sections in (p,t).
9734.3 5	1 ⁻ ,3 ⁻ ,4 ⁺			N	
9737.5 8	3 ⁻		B	N	
9764.5 5	(3 ⁻ ,4 ⁻ ,5 ⁻)			N	
9812.2 5	(1,2,3 ⁻)		B	N	
9862.6 5	3 ⁺			N	
9878.6 5	2 ⁺ ,3 ⁺		B	N	J ^π : (2 ⁺ ,3 ⁺ ,4 ⁺) from $^{35}\text{Cl}(\text{p},\gamma):\text{res.}$; 1 ⁺ ,2 ⁺ ,3 ⁺ from log ft=5.5 from 2 ⁺ parent (^{36}K ε decay).
9889.3 5				N	
9902.1 5	4 ⁺			N	
9927.0 ^e 5	8 ⁺ #	27.4 fs 43		I	E(level),J ^π ,T _{1/2} : from $^{24}\text{Mg}(^{20}\text{Ne},2\alpha\gamma)$.
9927.4 5	5 ⁻			MN	
9942.5 5	(2,3 ⁻)			N	
9956.9 5	(1,2 ⁺)		B	N	
9982.6 16	(1,3) ⁻			N	
9983.2 5	1 ⁺ ,(2 ⁺)			N	
9991.9 16	1 ⁻ ,2 ⁺			N	
9992.9 9			B	N Q	
10002.4 10	(1 ⁻ ,2,3)			N	
10044.4 12	1 ⁻			N	
10050? 60	1 ⁺			Q	E(level),J ^π : from $^{36}\text{Ar}(\text{e},\text{e}')$.

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Adopted Levels, Gammas (continued) ^{36}Ar Levels (continued)

E(level) [†]	J ^π [‡]	XREF		Comments
10050.6 15	2 ⁺		N	
10076.7 5	(1 ⁻ ,2,3)	B	K N	
10092.3 29			N	
10094.9 15	2 ⁺		N	
10099.4 6	1 ⁻		N	
10139.5 9	(2 ⁺ ,3 ⁻)		N	
10143.0 6	(1 ⁻ ,2)		N	
10149.6 5	(3 ⁻ ,4)		N	
10167.4 5	3 ⁻		N	
10173.4 5	(1 ⁻ ,2 ⁺)		N	
10186	1 ⁻	J		J ^π : ΔJ=1, E1 γ to 0 ⁺ , g.s.
10193.6 10	(3 ⁻ ,4,5,6 ⁺)		N	
10201.3 18		B	N	
10217 4	2 ⁺	J		J ^π : ΔJ=2, E2 γ to 0 ⁺ , g.s.
10220.3 5	4 ⁽⁻⁾		N	
10256.0 10	(3 ⁻ ,4)		N	
10257.5 10	(3 ⁻ ,4 ⁺)		N	
10260.5 19			N	
10267.3 5	1 ⁻		N	
10271.7 6	(3 ⁻ ,4 ⁻ ,5 ⁻)		N Q	
10281.1 10	3 ⁻		N	
10301.5 9	4 ⁺		N	
10308.7 8	(2,3) ⁻		N	
10319.5 15	2 ⁺		N	
10328 11	2 ⁺	B	J	
10329.0 15	(3 ⁻ ,4 ⁻ ,5 ⁻)		N	
10377.1 19			N	
10420.8 10	3 ⁻		N Q	
10435.0 14	(1,2,3 ⁻)		N	E(level),J ^π : strong γ to 0 ⁺ suggests J ^π =1,2,3 ⁻ . In $^{35}\text{Cl}(\text{p},\text{p}_0)$ data, J ^π =(1,2,3) ⁻ is proposed, but 2 ⁺ is suggested from γ-ray data (as commented in 1978En04 evaluation). This level may be a doublet.
10439.4 19	2 ⁺		N	
10449 3		B		
10462.2 9	2 ⁻		N	
10475.3 21			N	
10488.1 20	3 ⁻	J	N	E(level): from $^{32}\text{S}(\alpha,\gamma):\text{res.}$
10500.2 5	(1,2,3) ⁻		N	
10524 3			N	
10539.6 12	3 ⁻		N	
10558.5 20	2 ⁺		N Q	
10562.1 9	3 ⁻	B	N	
10568.3 21			N	
10582.9 6	5 ⁻		N	
10593.3 21	2 ⁺		N	
10596 11	3 ⁻	B	J	
10614 10	1 ⁺ ,2 ⁺ ,3 ⁺	B		J ^π : log ft=5.6 from 2 ⁺ parent (^{36}K ε decay).
10615.6 7	4 ⁻		N Q	
10617.9 21	3 ⁻		N	
10635.7 5	1 ⁻		N	
10646.7 10			N	
10650.6 11	1 ⁻	J	N	
10664.1 21	(0 ⁺ ,1 ⁻ ,2 ⁺)		N	
10674.3 22	(3 ⁻ ,4 ⁺)		N	
10675.9 10	5		N	
10683.9 10	1 ⁻		N	

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Adopted Levels, Gammas (continued) ^{36}Ar Levels (continued)

E(level) [†]	J^{π} [‡]	$T_{1/2}$	XREF		Comments
10700.4 15	2 ⁺			N	
10701.7 12	(0 ⁺ , 1 ⁻ , 2 ⁺)		B	N Q	
10738.7 97				N	
10751.6 15				N	
10759.1 19	4 ⁺			N	
10760.9 15	(2, 3) ⁻			N	
10763.8 22	4 ⁺			N Q	
10780.0 22	4 ⁺			N	
10790.1 15	2 ⁺		J	N	
10808.9 12	(1 ⁻ , 2, 3 ⁻)			N	J^{π} : γ s to 0 ⁺ and 4 ⁺ .
10816.0 29				N	
10823.4 15				N	
10832.3 15	(1 ⁻ , 3 ⁻ , 4 ⁺)			N	
10845.7 15				N	
10852.0 15	2 ⁺			N	
10853.8 15	0 ⁺	<4 fs		N U	
10854 11	3 ⁻		B J	N	
10865 7	(1 ⁻ , 3 ⁻ , 4 ⁺)			N	
10898.6 15				N	
10902 3	1 ⁻			N	
10906.0 10	(2 ⁺ to 5 ⁻)			N	J^{π} : γ s to 2 ⁺ and 5 ⁻ .
10917 3				N	
10934 3				N	
10939 3				N	
10955.7 12	(2 ⁺ to 5 ⁻)			N	J^{π} : γ s to 2 ⁺ and 5 ⁻ .
10960.3 24	2 ⁺			N	
10968.1 15	1, 2		B	N	J^{π} : 1, 2, 3 from $\log ft=7.2$ from 2 ⁺ parent (^{36}K ε decay); 3 less likely from γ to 0 ⁺ , g.s.
10976.2 24	4 ⁺			N	
10986.0 15				N	
10993.5 24	0 ⁺ , 1 ⁻ , 2 ⁺			N	
11000 ^a	5 ⁻ @			K	J^{π} : L=5 in $^{32}\text{S}(^6\text{Li}, d)$.
11014.3 15				N	
11027.7 15	(1 ⁻ to 5 ⁻)			N	J^{π} : γ s to 2 ⁺ and 4 ⁺ .
11040 11	2 ⁺		J	N	
11043.4 15	4 ⁺			N	
11050 3	0 ⁺ , 1 ⁻ , 2 ⁺			N	J^{π} : might Be same level as 11056 if $J^{\pi}=2^{+}$.
11056 3	1 ⁺ , 2 ⁺ , 3 ⁺		B	N	J^{π} : $\log ft=5.0$ from 2 ⁺ parent (^{36}K ε decay); might Be same level as 11050 if $J^{\pi}=2^{+}$.
11059.7 15	1 ⁻ , 3 ⁻			N	
11086.1 15				N	
11091 3	4 ⁺ , (5 ⁻)			N	
11110 3	0 ⁺ , 1 ⁻ , 2 ⁺ , 3 ⁻			N	
11118.8 15				N	
11123.2 25	3 ⁻			N	
11131.4 15	1 ⁻ , 3 ⁻			N	
11149.4 15	(1, 2, 3 ⁻)			N	J^{π} : γ to 0 ⁺ .
11155.9 15	2 ⁺			N	
11167.8 15				N Q	
11182.3 15	(3 ⁺ to 6 ⁻)			N	J^{π} : γ s to 3 ⁻ and 6 ⁻ .
11206.7 15				N	
11210 3				N	
11215.7 15				N	
11224 3	1 ⁻ , 2 ⁻			N	
11237.6 15	1 ⁺ , 2 ⁺ , 3 ⁺		B	N	J^{π} : $\log ft=4.8$ from 2 ⁺ (^{36}K ε decay).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued) ^{36}Ar Levels (continued)

E(level) [†]	J ^π [‡]	T _{1/2}	XREF	Comments
11243 3	(1 ⁻)		N	
11248 3	(1 ⁺)		N Q	J ^π : from $^{36}\text{Ar}(e,e')$.
11269.7 15			N	
11278 3	3 ⁻		N	
11303 3			N	
11312 3	4 ⁺ ,5 ⁻		N	
11321.9 19			N	
11336.4 19	2 ⁺		N	
11344 3	1 ⁻		N	
11358.8 19			N Q	
11419.1 19			N	
11515? 15			Q	
11580? 60	(2 ⁻)		Q	
11594? 15			Q	
11640 20	1 ⁺ ,2 ⁺ ,3 ⁺		B	J ^π : log ft=5.0 from 2 ⁺ (^{36}K ε decay).
11745? 15			Q	
11902.1 9	10 ⁺	0.43 ps 7	I	J ^π ,T _{1/2} : from $^{24}\text{Mg}(^{20}\text{Ne},2\alpha\gamma)$.
11946? 15			Q	
12066? 15			Q	
12090? 70	(1 ⁺)		Q	
12748.5 ^e 7	10 ⁺ [#]	10.1 fs 23	I	
12801? 15			Q	
13201? 15			Q	
13481? 15			Q	
13740? 15			Q	
13800? 15			Q	
15350.8 ^e 8	12 ⁺ [#]	14.1 fs 28	I	
15400 ^a	6 ⁺ [@]		K	J ^π : L=6 in $^{32}\text{S}(^6\text{Li},d)$.
16800 ^a	7 ⁻ [@]		K	J ^π : L=7 in $^{32}\text{S}(^6\text{Li},d)$.
18298.6 ^e 9	14 ⁺ [#]	11.0 fs 25	I	
19500 ^a	8 ⁺ [@]		K	J ^π : L=8 in $^{32}\text{S}(^6\text{Li},d)$.
22365.3 ^e 15	16 ⁺ [#]	<6.0 fs	I	
25300 ^a	10 ⁺ [@]		K	J ^π : L=10 in $^{32}\text{S}(^6\text{Li},d)$.
27148 ^{&}	2 ⁺ ^{&}		H	
27718 ^{&}	4 ⁺ ^{&}		H	
29508 ^{&}	6 ⁺ ^{&}		H	
30510	8 ⁺		H	
31694 ^{&}	7 ⁻ ^{&}		H	
32478 ^{&}	8 ⁺ ^{&}		H	
34770	13 ⁻		H	
37100	15 ⁻		H	
39500	16 ⁺		H	
x ^{bc}	(10 ⁺) ^b		G	
2200+x ^b	(12 ⁺) ^b	0.83 MeV 16	G	
4900+x ^b	(15 ⁻) ^b		G	
5600+x ^b	(15 ⁻) ^b		G	
7200+x ^b	(17 ⁻) ^b		G	
8300+x ^b	(17 ⁻) ^b	0.41 MeV 7	G	
11500+x ^b	(19 ⁻) ^b	2.5 MeV 3	G	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued) ^{36}Ar Levels (continued)

[†] From $^{35}\text{Cl}(p,\gamma)$:res, unless noted otherwise.

[‡] From $^{35}\text{Cl}(p,\gamma)$:res from resonance analysis, $\gamma(\theta)$, $\gamma\gamma(\theta)$ and polarization measurements, and RUL. Other arguments may be given in comments.

From $^{24}\text{Mg}(^{20}\text{Ne},2\alpha\gamma)$ based on $\gamma(\theta)$ which establish stretched E2 for all the in-band and interband linking transitions.

@ From $^{32}\text{S}(^6\text{Li},d)$ from d- α angular correlations.

& Possible member of a hyperdeformed structure from $^{24}\text{Mg}(^{12}\text{C},\alpha),(^{12}\text{C},^{12}\text{C})$:fusion. Determined its J^π by Regge-pole and phase shift analysis.

^a Member of a rotational band without parity splitting based on J(J+1) rule, from $^{32}\text{S}(^6\text{Li},d)$.

^b Possible member of a rotational structure populated in $^{20}\text{Ne}(^{16}\text{O},^{16}\text{O}),(^{16}\text{O},^{12}\text{C})$ fusion reaction. The J^π assignment is from $\sigma(\theta)$ data in above reaction (1996Mi01).

^c x corresponds to $E_R(\text{c.m.})=17.5$ MeV in $^{20}\text{Ne}(^{16}\text{O},^{16}\text{O})$ reaction.

^d Band(A): g.s. band. Band from $^{24}\text{Mg}(^{20}\text{Ne},2\alpha\gamma)$.

^e Band(B): SD band. Band from $^{24}\text{Mg}(^{20}\text{Ne},2\alpha\gamma)$. $\beta_2=0.46$ 3 (2001Sv02). Experimental B(E2)'s are in good agreement with those from shell model calculations of 2001Lo01 for configuration= $(s_{1/2}d_{3/2})^4(\text{pf})^4$.

Adopted Levels, Gammas (continued)

$\gamma(^{36}\text{Ar})$								
$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π	Mult. ‡	$\delta^\ddagger$	Comments
1970.38	2 ⁺	1970.3	100	0.0	0 ⁺	E2		B(E2)(W.u.)=8.2 5
4178.32	3 ⁻	2207.9	100 1	1970.38	2 ⁺	E1		B(E1)(W.u.)=2.3×10 ⁻⁵ 3
		4178.1	7.3 10	0.0	0 ⁺	[E3]		B(E3)(W.u.)=20.6 20 (2002Ki06)
4329.1	(0,1,2) ⁺	2358.6	100	1970.38	2 ⁺			
		4328.8	<10	0.0	0 ⁺			
4414.40	4 ⁺	2443.9	100	1970.38	2 ⁺	E2		B(E2)(W.u.)=12.0 16
		4414.1	<2	0.0	0 ⁺			
4440.11	2 ⁺	2469.6	56 3	1970.38	2 ⁺	M1+E2	>1.5	B(M1)(W.u.)<0.0025; B(E2)(W.u.)>2.3
								Mult., δ : from ³³ S(α , γ).
		4439.8	100 3	0.0	0 ⁺	E2		B(E2)(W.u.)=0.39 8
								Mult.: from ³³ S(α , γ).
4951.4	2 ⁺	537.0	<7	4414.40	4 ⁺			
		773.1	<2.4	4178.32	3 ⁻			
		2980.9	18 5	1970.38	2 ⁺			
		4951.0	100 5	0.0	0 ⁺			
4974.05	2 ⁻	533.9	<0.3	4440.11	2 ⁺			
		559.6	<0.5	4414.40	4 ⁺			
		795.7	100 3	4178.32	3 ⁻	M1+E2	-0.21 7	B(M1)(W.u.)=0.0033 10; B(E2)(W.u.)=0.8 6
		3003.5	5.1 13	1970.38	2 ⁺			
		4973.7	23 3	0.0	0 ⁺			
5171.13	5 ⁻	197.1	<5	4974.05	2 ⁻			
		219.7	<4	4951.4	2 ⁺			
		731.0	<0.4	4440.11	2 ⁺			
		756.7	14.6 24	4414.40	4 ⁺			
		992.8	100 4	4178.32	3 ⁻	E2		B(E2)(W.u.)=0.74 6
		3200.6	7.3 12	1970.38	2 ⁺			
		5170.7	<1.2	0.0	0 ⁺			
5194.4	(0 ⁺ ,1 ⁺ ,2 ⁺ ,3 ⁻)	754.3	<3	4440.11	2 ⁺			
		780.0	<3	4414.40	4 ⁺			
		3223.9	100	1970.38	2 ⁺			
		5194.4	<10	0.0	0 ⁺			
5836.0	1 ⁻	664.9	<1	5171.13	5 ⁻			
		861.9	<1	4974.05	2 ⁻			
		884.6	<1	4951.4	2 ⁺			
		1395.9	<1	4440.11	2 ⁺			
		1421.6	<1	4414.40	4 ⁺			
		1506.9	<1	4329.1	(0,1,2) ⁺			
		1657.6	1 1	4178.32	3 ⁻			
		3865.4	4.2 21	1970.38	2 ⁺			
		5835.5	100.0 21	0.0	0 ⁺	E1		B(E1)(W.u.)=0.00047 16
5856.65	3 ⁻	x	10.5					Additional information 1.

Adopted Levels, Gammas (continued)

$\gamma(^{36}\text{Ar})$ (continued)								
$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π	Mult. ‡	$\delta^\ddagger$	Comments
5856.65	3^-	685.5	<1.3	5171.13	5^-			
		882.6	<2.6	4974.05	2^-			
		905.2	<2.6	4951.4	2^+			
		1416.5	<6.6	4440.11	2^+			
		1442.2	<5.3	4414.40	4^+			
		1527.5	<4.0	4329.1	$(0,1,2)^+$			
		1678.3	17.1 13	4178.32	3^-	M1+E2	-0.46 17	B(M1)(W.u.)=0.0015 6; B(E2)(W.u.)=0.4 3 δ : or +2.9 9.
		3886.0	100 3	1970.38	2^+	E1(+M2)	+0.02 2	B(E1)(W.u.)=(2.4×10^{-5} 8); B(M2)(W.u.)=(0.003 +6-3)
		5856.7	4.0 13	0.0	0^+			
		724.8	<1.0	5171.13	5^-			
5895.92	4^-	921.9	<1.0	4974.05	2^-			
		1481.5	<3.2	4414.40	4^+			
		1566.8	<2.1	4329.1	$(0,1,2)^+$			
		1717.6	100 2	4178.32	3^-	M1+E2	+0.16 2	B(M1)(W.u.)=0.011 5; B(E2)(W.u.)=0.35 17
		3925.3	6.4 21	1970.38	2^+			
		5895.4	<3.2	0.0	0^+			
		1186.0 3	27.7 10	4951.4	2^+			E_γ, I_γ : from $^{24}\text{Mg}(^{20}\text{Ne}, 2\alpha\gamma)$.
6136.5	4^+	1696.7 4	8.6 6	4440.11	2^+			E_γ, I_γ : from $^{24}\text{Mg}(^{20}\text{Ne}, 2\alpha\gamma)$.
		4165.6 10	100 12	1970.38	2^+	E2		$E_\gamma, I_\gamma, \text{Mult.}$: from $^{24}\text{Mg}(^{20}\text{Ne}, 2\alpha\gamma)$. Additional information 2.
6217.3	5^-	x	15.6					
		360.7	<3.9	5856.65	3^-			
		381.3	<3.9	5836.0	1^-			
		1046.2	2.6 7	5171.13	5^-			
		1243.2	<1.3	4974.05	2^-			
		1265.9	<2.6	4951.4	2^+			
		1777.1	<1.3	4440.11	2^+			
		1802.9	12 4	4414.40	4^+	E1		B(E1)(W.u.)= 4.5×10^{-5} 17
		1888.1	<2.6	4329.1	$(0,1,2)^+$			
		2038.9	100 5	4178.32	3^-	E2		B(E2)(W.u.)=8.0 16
		4246.7	<2.6	1970.38	2^+			
		6216.7	<2.6	0.0	0^+			
		1404.6	<12.5	4951.4	2^+			
6356.0	4^+	1915.8	31 4	4440.11	2^+			
		1941.5	77 4	4414.40	4^+			
		4385.3	100 4	1970.38	2^+	E2		B(E2)(W.u.)=0.07 3
		6355.4	<14.6	0.0	0^+			
		754.3	<2.4	5856.65	3^-			
6611.0	2^+	775.0	<1.2	5836.0	1^-			
		1439.8	<6.1	5171.13	5^-			
		1660	<6.1	4951.4	2^+			

Adopted Levels, Gammas (continued)

$\gamma(^{36}\text{Ar})$ (continued)								
$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π	Mult. [‡]	$\delta^\ddagger$	Comments
6611.0	2^+	2170.8	<7.3	4440.11	2^+			
		2196.5	<6.1	4414.40	4^+			
		2281.8	<7.3	4329.1	$(0,1,2)^+$			
		2432.6	100 4	4178.32	3^-			
		4640.3	<6.1	1970.38	2^+			
		6610.3	22 4	0.0	0^+			
6645.6	$(2^+,3^+,4^+)$	2205.4	100	4440.11	2^+			
6724	NOT $(2)^+$	x	43					Additional information 3.
		6723	100 14	0.0	0^+			
6731.0	$1^+,2^+$	4759.6 7	100 18	1970.38	2^+			
		6730.5 5	100 16	0.0	0^+			
6835.16	4^-	978.5	12 10	5856.65	3^-			
		1664.0	97 8	5171.13	5^-	M1+E2	+0.7 3	B(M1)(W.u.)=0.0020 9; B(E2)(W.u.)=1.3 9 δ : or +1.5 +40-4.
		1861.1	100 8	4974.05	2^-			
		1883.7	<5.2	4951.4	2^+			
		2395.0	12 3	4440.11	2^+			
		2506.0	<5.4	4329.1	$(0,1,2)^+$			
		2656.7	49 5	4178.32	3^-	M1+E2	+0.32 8	B(M1)(W.u.)=0.00034 12; B(E2)(W.u.)=0.018 10 δ : or >+4.
		4864.4	<5.4	1970.38	2^+			
		6834.5	<2.7	0.0	0^+			
		1665.3	46 4	5171.13	5^-	E2		B(E2)(W.u.)=9 3
6836.50	3^-	1862.4	19 7	4974.05	2^-			
		1885.1	6.1 9	4951.4	2^+			
		2396.3	4.4 18	4440.11	2^+			
		2425	<3.5	4414.40	4^+			
		2658.7	100 7	4178.32	3^-	M1+E2	-1.9 5	B(M1)(W.u.)=0.0008 5; B(E2)(W.u.)=1.6 5 δ : or +1.5 +40-4.
		4865.8	<8.8	1970.38	2^+			
		6835.8	<1.8	0.0	0^+			
		4896.2	100 7	1970.38	2^+			
6866.9	$(1^+,2^+)$	6866.2	33 7	0.0	0^+			
7136.5	$(1^-,2^+)$	1300.5	<1.3	5836.0	1^-			
		2162.4	<2.5	4974.05	2^-			
		2696.3	<3.8	4440.11	2^+			
		2722.0	<2.5	4414.40	4^+			
		2958.0	<5.1	4178.32	3^-			
		5165.7	26.6 25	1970.38	2^+			
		7135.7	100.0 25	0.0	0^+			
7139.6	3^+	1282.9	<3.8	5856.65	3^-			
		1303.6	<3.8	5836.0	1^-			

Adopted Levels, Gammas (continued)

$\gamma(^{36}\text{Ar})$ (continued)								
$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π	Mult. ‡	$\delta^\ddagger$	Comments
7139.6	3 ⁺	2699.4	100 9	4440.11	2 ⁺	M1+E2	-0.28 3	B(M1)(W.u.)=0.008 4; B(E2)(W.u.)=0.29 17 δ : or -1.5 2 (1973Ho33).
		2725.1	<5.7	4414.40	4 ⁺			
		2961.1	<5.7	4178.32	3 ⁻			
		5168.8	89 9	1970.38	2 ⁺			
		7138.8	<3.8	0.0	0 ⁺			
7178.9	(1,2) ⁺	5208.1	49 15	1970.38	2 ⁺			
		7178.1	100 16	0.0	0 ⁺			
7247.4	(1,2,3) ⁻	3068.9	<5	4178.32	3 ⁻			
		5276.6	100	1970.38	2 ⁺			
		7246.6	<6	0.0	0 ⁺			
7258.6	3 ⁻	x	11					Additional information 4.
		3080.1	<13.3	4178.32	3 ⁻			
		5287.8	100 6	1970.38	2 ⁺	E1		B(E1)(W.u.)>0.00024
		7257.8	<16.7	0.0	0 ⁺			
7336.6	3 ⁺	1479.9	<7.4	5856.65	3 ⁻			
		2362.5	<5.6	4974.05	2 ⁻			
		2385.1	<9.3	4951.4	2 ⁺			
		2896.4	100 4	4440.11	2 ⁺			
		2922.1	20 4	4414.40	4 ⁺	M1(+E2)	+0.02 7	B(M1)(W.u.)=(0.009 5); B(E2)(W.u.)=(0.0015 +103-15) δ : or -4.0 9.
		3007.4	<13	4329.1	(0,1,2) ⁺			
		3158.1	17 4	4178.32	3 ⁻			
		5365.8	48 6	1970.38	2 ⁺	M1+E2	+0.31 10	B(M1)(W.u.)=0.0030 16; B(E2)(W.u.)=0.04 3 δ : or >+7.
7353.9	6 ⁻	7335.8	<5.6	0.0	0 ⁺			
		1497.2	<6	5856.65	3 ⁻			
		1517.9	<4	5836.0	1 ⁻			
		2182.7	100	5171.13	5 ⁻	M1+E2	-6.0 9	B(M1)(W.u.)=0.00037 14; B(E2)(W.u.)=10.2 24
		2379.8	<4	4974.05	2 ⁻			
		2402.4	<4	4951.4	2 ⁺			
		2913.7	<3	4440.11	2 ⁺			
		2939.4	<4	4414.40	4 ⁺			
		3024.7	<8	4329.1	(0,1,2) ⁺			
		3175.4	<7	4178.32	3 ⁻			
		5383.1	<5	1970.38	2 ⁺			
		7353.1	<3	0.0	0 ⁺			
7432.3	1 ⁺	5461.5	54 23	1970.38	2 ⁺			
		7431.5	100 23	0.0	0 ⁺			
7573.1	4 ⁻	1677.1	10.6 21	5895.92	4 ⁻			
		1737.1	<4.3	5836.0	1 ⁻			

Adopted Levels, Gammas (continued)

<u>$\gamma(^{36}\text{Ar})$ (continued)</u>								
<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>$E_\gamma^\dagger$</u>	<u>$I_\gamma^\dagger$</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.[‡]</u>	<u>$\delta^\ddagger$</u>	<u>Comments</u>
7573.1	4 ⁻	2401.9	100 4	5171.13	5 ⁻	M1+E2	-0.49 4	B(M1)(W.u.)=0.0036 12; B(E2)(W.u.)=0.55 19 δ : or -1.68 12.
		2598.9	17.0 21	4974.05	2 ⁻	E2		B(E2)(W.u.)=0.33 11
		2621.6	<2.1	4951.4	2 ⁺			
		3132.8	<4.3	4440.11	2 ⁺			
		3158.6	11 4	4414.40	4 ⁺			
		3243.8	<4.3	4329.1	(0,1,2) ⁺			
		3394.6	70 6	4178.32	3 ⁻	M1+E2	-0.07 4	B(M1)(W.u.)=0.0011 4; B(E2)(W.u.)=0.0017 +21-17 δ : or -3.2 5.
		5602.3	4.3 9	1970.38	2 ⁺			
		7572.2	<2.1	0.0	0 ⁺			
7672.1	(3) ⁻	2697.9	25 9	4974.05	2 ⁻			
		5701.2	100 9	1970.38	2 ⁺			
7710.3	1 ⁺	5739.4	100 11	1970.38	2 ⁺			
		7709.4	59 11	0.0	0 ⁺			
7749.7	2 ⁻	5778.8	100	1970.38	2 ⁺			
7767.0	6 ⁺	1629.8 3	100.0 17	6136.5	4 ⁺	E2		E_γ, I_γ : from $^{24}\text{Mg}(^{20}\text{Ne}, 2\alpha\gamma)$.
		3352.5 8	42.9 17	4414.40	4 ⁺			B(E2)(W.u.)=0.75 12 $E_\gamma, I_\gamma, \text{Mult.}$: from $^{24}\text{Mg}(^{20}\text{Ne}, 2\alpha\gamma)$.
7879	(1,2) ⁻	2043	100 10	5836.0	1 ⁻			
		2905	67 10	4974.05	2 ⁻			
7971.4	1 ⁺ , 2 ⁺	7970.5 7	100	0.0	0 ⁺			
8015.9	(3,4) ⁻	2159.2	51 7	5856.65	3 ⁻			
		2844.6	40 4	5171.13	5 ⁻			
		3041.7	100 9	4974.05	2 ⁻			
		3575.6	<4.4	4440.11	2 ⁺			
		3601.3	4.4 10	4414.40	4 ⁺			
		3837.4	27 4	4178.32	3 ⁻			
		6045.0	<6.7	1970.38	2 ⁺			
		8014.9	<2.2	0.0	0 ⁺			
8131.9	1 ⁺	6161.0	67 12	1970.38	2 ⁺			
		8130.9	100 12	0.0	0 ⁺			
8288		2392	100	5895.92	4 ⁻			
8332.5	(3) ⁻	x	100					Additional information 5.
		4153.9	43 7	4178.32	3 ⁻			
8472.0	(3 ⁻ , 4 ⁻ , 5 ⁻)	2254.6	13 3	6217.3	5 ⁻			
		2576.0	41 6	5895.92	4 ⁻			
		2615.2	66 6	5856.65	3 ⁻			
		2635.9	<6.3	5836.0	1 ⁻			
		3300.7	100 6	5171.13	5 ⁻			
		3497.8	<6.3	4974.05	2 ⁻			

Adopted Levels, Gammas (continued)

<u>$\gamma(^{36}\text{Ar})$ (continued)</u>							Comments
$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π	Mult. [‡]	
8472.0	$(3^-, 4^-, 5^-)$	3520.4	<6.3	4951.4	2 ⁺		
		4057.4	88 6	4414.40	4 ⁺		
		4293.4	6.3 19	4178.32	3 ⁻		
		6501.0	<3.1	1970.38	2 ⁺		
		8470.9	<3.1	0.0	0 ⁺		
8556.3	2 ⁺	6585.1 5	100	1970.38	2 ⁺		E_γ, I_γ : from ^{36}K ε decay.
8593		2376	100	6217.3	5 ⁻		E_γ, I_γ : from $^{33}\text{S}(\alpha, n\gamma)$.
8739		3568	100	5171.13	5 ⁻		E_γ, I_γ : from $^{33}\text{S}(\alpha, n\gamma)$.
8806.4	$(0^-, 1, 2, 3^-)$	6835.3	100	1970.38	2 ⁺		
8909.1	2 ⁺	6938.0	100 16	1970.38	2 ⁺		E_γ, I_γ : from $^{32}\text{S}(\alpha, \gamma)$:res.
		8907.9	61 10	0.0	0 ⁺	E2	$E_\gamma, I_\gamma, \text{Mult.}$: from $^{32}\text{S}(\alpha, \gamma)$:res.
8921.6		3748	100	5171.13	5 ⁻		E_γ : from $^{33}\text{S}(\alpha, n\gamma)$.
8938.8	$(2^+, 3, 4^-)$	1266.7	7.6 4	7672.1	$(3)^-$		
		2102.2	15 5	6836.50	3 ⁻		
		3082.0	57 8	5856.65	3 ⁻		
		3964.5	5.9 25	4974.05	2 ⁻		
		4524.1	20 6	4414.40	4 ⁺		
		4609.4	<2.1	4329.1	$(0, 1, 2)^+$		
		4760.1	100 10	4178.32	3 ⁻		
		6967.7	5.1 21	1970.38	2 ⁺		
		8937.6	<0.4	0.0	0 ⁺		
		3843.5	100	5171.13	5 ⁻		
9014.9	$(3^-, 4, 5^-)$	4600.2	<5	4414.40	4 ⁺		
		4685.5	<8	4329.1	$(0, 1, 2)^+$		
		4836.2	<3	4178.32	3 ⁻		
		7043.8	<6	1970.38	2 ⁺		
		9013.7	<1.4	0.0	0 ⁺		
9024.8	2	2158.3	1	6866.9	$(1^+, 2^+)$		
		4051.6	1	4974.05	2 ⁻		
		4610.6	<1	4414.40	4 ⁺		
		4695.9	<1	4329.1	$(0, 1, 2)^+$		
		4846.6	8	4178.32	3 ⁻		
		7054.2	100	1970.38	2 ⁺		
		9024.1	1	0.0	0 ⁺		
9066.4	3 ⁻	1729.8	11	7336.6	3 ⁺		
		2229.8	43	6836.50	3 ⁻		
		3170.3	11	5895.92	4 ⁻		
		3209.6	100	5856.65	3 ⁻		
		3895.0	4	5171.13	5 ⁻		
		4092.1	18	4974.05	2 ⁻		
		4114.7	11	4951.4	2 ⁺		

Adopted Levels, Gammas (continued)

							$\gamma(^{36}\text{Ar})$ (continued)	
$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π	Mult. ‡	Comments	
9066.4	3^-	4626.0	29	4440.11	2^+			
		4651.7	207 19	4414.40	4^+			
		4737.0	<4	4329.1	$(0,1,2)^+$			
		4887.7	82	4178.32	3^-			
		7095.3	<4	1970.38	2^+			
		9065.2	<1	0.0	0^+			
		9117.0	1^-	9116.8	100			
9132.5	3^-	2295.9	13	6836.50	3^-			
		2521.4	4	6611.0	2^+			
		3236.4	7	5895.92	4^-			
		3275.5	17	5856.65	3^-			
		3296.3	2	5836.0	1^-			
		4158.2	9	4974.05	2^-			
		4717.8	4	4414.40	4^+			
9144.9	$(2^+, 3^-)$	4803.1	<2	4329.1	$(0,1,2)^+$			
		4953.8	28	4178.32	3^-			
		7161.4	100	1970.38	2^+			
		9131.3	2	0.0	0^+			
		2308.3	6	6836.50	3^-			
		3308.7	22	5836.0	1^-			
		4170.6	3	4974.05	2^-			
		4704.5	97	4440.11	2^+			
		4730.2	6	4414.40	4^+			
		4815.5	<3	4329.1	$(0,1,2)^+$			
		4966.2	75	4178.32	3^-			
		7173.8	100	1970.38	2^+			
		9143.7	3	0.0	0^+			
		9186	(6^+)	4015	100 20			
4771	100 20			4414.40	4^+			
9192.1	$(3^-, 4^+)$	1520.0	11	7672.1	$(3)^-$			
		1855.4	100	7336.6	3^+			
		2355.5	53	6836.50	3^-			
		2468.0	26	6724	NOT $(2)^+$			
		2836.0	11	6356.0	4^+			
		2974.7	21	6217.3	5^-			
		3055.5	11	6136.5	4^+			
		3296.0	26	5895.92	4^-			
		3335.3	21	5856.65	3^-			
		4020.7	47	5171.13	5^-			
		4240.4	42	4951.4	2^+			
		4751.5	16	4440.11	2^+			

Adopted Levels, Gammas (continued)

$\gamma(^{36}\text{Ar})$ (continued)

<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_γ</u>	<u>I_γ</u>	<u>E_f</u>	<u>J_f^π</u>
9192.1	$(3^-, 4^+)$	4777.4	100	4414.40	4^+
		4862.6	<5	4329.1	$(0, 1, 2)^+$
		5013.4	42	4178.32	3^-
		7220.9	<11	1970.38	2^+
		9190.8	<16	0.0	0^+
9220.2	1^+	3384.0	2	5836.0	1^-
		4245.9	6	4974.05	2^-
		4268.5	2	4951.4	2^+
		4779.7	22	4440.11	2^+
		4805.5	<2	4414.40	4^+
		4890.7	1	4329.1	$(0, 1, 2)^+$
		5041.5	<2	4178.32	3^-
		7249.0	100	1970.38	2^+
		9218.9	68	0.0	0^+
		9240.5	13	7247.4	$(1, 2, 3)^-$
9240.5	2^-	2103.9	11	7136.5	$(1^-, 2^+)$
		2373.5	5	6866.9	$(1^+, 2^+)$
		3404.3	14	5836.0	1^-
		4266.2	11	4974.05	2^-
		4288.8	14	4951.4	2^+
		4825.8	<2	4414.40	4^+
		4911.0	7	4329.1	$(0, 1, 2)^+$
		5061.8	4	4178.32	3^-
		7269.3	100	1970.38	2^+
		9239.2	<1	0.0	0^+
		9248.4	48	6836.50	3^-
		3391.6	12	5856.65	3^-
		3412.2	9	5836.0	1^-
9248.4	$(1^-, 2^-, 3^-)$	4274.1	9	4974.05	2^-
		4807.9	100	4440.11	2^+
		4833.7	<3	4414.40	4^+
		4918.9	<6	4329.1	$(0, 1, 2)^+$
		5069.7	33	4178.32	3^-
		7277.2	88	1970.38	2^+
		9247.1	3	0.0	0^+
		9258.3	11	6835.16	4^-
		2902.2	8	6356.0	4^+
		3362.2	19	5895.92	4^-
9258.3	3^-	3401.5	8	5856.65	3^-
		3422.1	6	5836.0	1^-
		4284.0	8	4974.05	2^-
		4306.6	6	4951.4	2^+

Adopted Levels, Gammas (continued)

<u>$\gamma(^{36}\text{Ar})$ (continued)</u>							
<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>$E_\gamma^\dagger$</u>	<u>$I_\gamma^\dagger$</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.[‡]</u>	<u>$\delta^\ddagger$</u>
9258.3	3 ⁻	4817.8	61	4440.11	2 ⁺		
		4843.6	33	4414.40	4 ⁺		
		4928.8	<3	4329.1	(0,1,2) ⁺		
		5079.6	100	4178.32	3 ⁻		
		7287.1	17	1970.38	2 ⁺		
		9257.0	<3	0.0	0 ⁺		
9300.1	4 ⁻	1628.0	1	7672.1	(3) ⁻		
		2041.4	6	7258.6	3 ⁻		
		2464.8	100	6835.16	4 ⁻	M1(+E2)	0.0 2
		3082.7	9	6217.3	5 ⁻		
		3404.0	28	5895.92	4 ⁻	M1(+E2)	-0.12 17
		3443.3	11	5856.65	3 ⁻	M1(+E2)	-0.01 7
		4128.7	30	5171.13	5 ⁻	M1(+E2)	+0.05 +8-3
		4885.3	13	4414.40	4 ⁺	E1(+M2)	-0.1 2
		5121.4	15	4178.32	3 ⁻	M1(+E2)	+0.02 6
		7328.9	1	1970.38	2 ⁺		
9342.5	3 ⁻	1769.4	2	7573.1	4 ⁻		
		2505.9	20	6836.50	3 ⁻	M1+E2	+0.09 4
		3446.4	8	5895.92	4 ⁻	M1(+E2)	-0.02 3
		3485	10	5856.65	3 ⁻	M1+E2	+0.10 7
		4368.2	19	4974.05	2 ⁻	M1+E2	-0.10 2
		4927.7	2	4414.40	4 ⁺		
		5013.0	<5	4329.1	(0,1,2) ⁺		
		5163.8	100	4178.32	3 ⁻	M1(+E2)	+0.017 17
		7371.3	8	1970.38	2 ⁺	E1+M2	+0.11 3
		9341.2	<1	0.0	0 ⁺		
9356.0	2 ⁺	2019.3	9	7336.6	3 ⁺		
		4381.7	7	4974.05	2 ⁻		
		4404.3	10	4951.4	2 ⁺		
		4941.2	<3	4414.40	4 ⁺		
		5026.5	<3	4329.1	(0,1,2) ⁺		
		5177.3	9	4178.32	3 ⁻		
		7384.8	12	1970.38	2 ⁺		
		9354.7	100	0.0	0 ⁺		
9365.9	1 ⁻	1486.9	3	7879	(1,2) ⁻		
		2108.5	12	7258.6	3 ⁻		
		2229.3	21	7136.5	(1 ⁻ ,2 ⁺)		
		2754.8	25	6611.0	2 ⁺		
		3529.7	13	5836.0	1 ⁻		
		4171.2	1	5194.4	(0 ⁺ ,1 ⁺ ,2 ⁺ ,3 ⁻)		
		4414.2	2	4951.4	2 ⁺		
		4925.4	8	4440.11	2 ⁺		

Adopted Levels, Gammas (continued) $\gamma(^{36}\text{Ar})$ (continued)

$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π	Comments
9365.9	1^-	5036.4	2	4329.1	$(0,1,2)^+$	
		5187.2	<2	4178.32	3^-	
		7394.7	100	1970.38	2^+	
		9364.6	13	0.0	0^+	
9374.1	$(1^-, 2^-, 3^-)$	2538.8	2	6835.16	4^-	
		3537.9	3	5836.0	1^-	
		4399.8	1	4974.05	2^-	
		4933.6	1	4440.11	2^+	
		4959.3	<1	4414.40	4^+	
		5044.6	<1	4329.1	$(0,1,2)^+$	
		5195.4	6	4178.32	3^-	
		7402.9	100	1970.38	2^+	
		9372.8	1	0.0	0^+	
9379.9	$(2^+, 3^+, 4^+)$	2240.2	3	7139.6	3^+	
		2543.3	1	6836.50	3^-	
		4939.4	31	4440.11	2^+	
		4965.1	15	4414.40	4^+	
		5050.4	<2	4329.1	$(0,1,2)^+$	
		5201.2	3	4178.32	3^-	
		7408.7	100	1970.38	2^+	
		9378.6	<0.2	0.0	0^+	
9393.4	$(2^+, 3^+, 4^+)$	4441.7	3	4951.4	2^+	
		4952.9	3	4440.11	2^+	
		4978.6	5	4414.40	4^+	
		5063.9	<1	4329.1	$(0,1,2)^+$	
		5214.7	3	4178.32	3^-	
		7422.2	100	1970.38	2^+	
		9392.1	<1	0.0	0^+	
9413.9		2060		7353.9	6^-	E_γ : from $^{33}\text{S}(\alpha, n\gamma)$.
9439.2	$(2^+, 3^+, 4^+)$	4998.7	28	4440.11	2^+	
		5024.4	21	4414.40	4^+	
		5109.7	<4	4329.1	$(0,1,2)^+$	
		5260.5	<6	4178.32	3^-	
		7468.0	100	1970.38	2^+	
		9437.9	<2	0.0	0^+	
9448.1	$1^-, 2^+, 3^-$	2611.5	13	6836.50	3^-	
		4473.8	11	4974.05	2^-	
		5033.3	6	4414.40	4^+	
		5118.6	<4	4329.1	$(0,1,2)^+$	
		5269.4	58	4178.32	3^-	
		7476.9	100	1970.38	2^+	
		9446.8	<2	0.0	0^+	

Adopted Levels, Gammas (continued)

$\gamma(^{36}\text{Ar})$ (continued)

$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π
9465.9	$1^-, 2^+$	1755.6	2	7710.3	1^+
		5025.4	3	4440.11	2^+
		5051.1	2	4414.40	4^+
		5136.4	6	4329.1	$(0, 1, 2)^+$
		5287.2	4	4178.32	3^-
		7494.7	100	1970.38	2^+
		9464.6	86	0.0	0^+
9474.0	$(1, 2)$	1342.1	22	8131.9	1^+
		1763.7	27	7710.3	1^+
		4522.3	16	4951.4	2^+
		5033.5	81	4440.11	2^+
		5059.2	<5	4414.40	4^+
		5144.5	<11	4329.1	$(0, 1, 2)^+$
		5295.3	<8	4178.32	3^-
		7502.8	29	1970.38	2^+
		9472.7	100	0.0	0^+
		2166.1	14	7336.6	3^+
9502.8	$(2, 3)$	2891.7	28	6611.0	2^+
		5062.3	25	4440.11	2^+
		5088.0	7	4414.40	4^+
		5173.3	<2	4329.1	$(0, 1, 2)^+$
		5324.1	<2	4178.32	3^-
		7531.6	100	1970.38	2^+
		9501.5	2	0.0	0^+
9509.6	$(2^+, 3^+, 4^+)$	5069.1	3	4440.11	2^+
		5094.8	5	4414.40	4^+
		5180.1	<2	4329.1	$(0, 1, 2)^+$
		5330.9	<3	4178.32	3^-
		7538.4	100	1970.38	2^+
		9508.3	<0.5	0.0	0^+
9542.0	$(1, 2, 3)^-$	2705.4	44	6836.50	3^-
		3705.8	16	5836.0	1^-
		4590.3	16	4951.4	2^+
		5101.5	22	4440.11	2^+
		5127.2	<2	4414.40	4^+
		5212.5	<4	4329.1	$(0, 1, 2)^+$
		5363.3	24	4178.32	3^-
		7570.8	100	1970.38	2^+
		9540.6	<1.	0.0	0^+
9550.3	$(0^+ \text{ to } 4^+)$	4575.9	1	4974.05	2^-
		5109.8	21	4440.11	2^+
		5135.5	<0.4	4414.40	4^+

Adopted Levels, Gammas (continued)

<u>$\gamma(^{36}\text{Ar})$ (continued)</u>							
<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>$E_\gamma^\dagger$</u>	<u>$I_\gamma^\dagger$</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.[‡]</u>	<u>$\delta^\ddagger$</u>
9550.3	(0 ⁺ to 4 ⁺)	5220.8	<0.4	4329.1	(0,1,2) ⁺		
		5371.5	<1	4178.32	3 ⁻		
		7579.1	100	1970.38	2 ⁺		
		9548.9	<0.1	0.0	0 ⁺		
9574.3	4 ⁻	1558.4	2	8015.9	(3,4) ⁻		
		2001.1	36	7573.1	4 ⁻	M1+E2	-0.08 3
		3356.8	4	6217.3	5 ⁻	M1+E2	+0.03 6
		3678	28	5895.92	4 ⁻	M1+E2	-0.06 4
		3717.4	6	5856.65	3 ⁻	M1+E2	+0.05 3
		4402.9	100	5171.13	5 ⁻	M1+E2	+0.05 1
		5159.6	<2	4414.40	4 ⁺		
		5244.8	<2	4329.1	(0,1,2) ⁺		
		5395.5	24	4178.32	3 ⁻	M1+E2	-0.03 1
		7603.1	<2	1970.38	2 ⁺		
		9572.9	<0.2	0.0	0 ⁺		
9595.4	2 ⁺	2347.9	4	7247.4	(1,2,3) ⁻		
		2458.8	16	7136.5	(1 ⁻ ,2 ⁺)		
		3759.2	14	5836.0	1 ⁻		
		4400.7	4	5194.4	(0 ⁺ ,1 ⁺ ,2 ⁺ ,3 ⁻)		
		5154.9	7	4440.11	2 ⁺		
		5180.6	<2	4414.40	4 ⁺		
		5265.9	<2	4329.1	(0,1,2) ⁺		
		5416.6	<4	4178.32	3 ⁻		
		7624.2	100	1970.38	2 ⁺		
		9594.0	34	0.0	0 ⁺		
9606.8	(0,1,2) ⁻	1896.4	6	7710.3	1 ⁺		
		3770.6	100	5836.0	1 ⁻		
		5192.0	<3	4414.40	4 ⁺		
		5277.3	<2	4329.1	(0,1,2) ⁺		
		5428.0	<2	4178.32	3 ⁻		
		7635.6	<2	1970.38	2 ⁺		
		9605.4	<0.5	0.0	0 ⁺		
9667.1	3 ⁻	3771.0	8	5895.92	4 ⁻		
		4495.7	5	5171.13	5 ⁻		
		5226.6	13	4440.11	2 ⁺		
		5252.3	16	4414.40	4 ⁺		
		5337.6	<3	4329.1	(0,1,2) ⁺		
		5488.3	17	4178.32	3 ⁻		
		7695.8	100	1970.38	2 ⁺		
		9665.7	<2	0.0	0 ⁺		
9681.9	4 ⁺ ,6 ⁺	5267.1	100	4414.40	4 ⁺	E2,M1+E2	
		5352.4	<2	4329.1	(0,1,2) ⁺		

Adopted Levels, Gammas (continued)

<u>$\gamma(^{36}\text{Ar})$ (continued)</u>							
<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>$E_\gamma^\dagger$</u>	<u>$I_\gamma^\dagger$</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.‡</u>	<u>$\delta^\ddagger$</u>
9681.9	$4^+, 6^+$	5503.1	<3	4178.32	3^-		
		7710.6	<1	1970.38	2^+		
9734.3	$1^-, 3^-, 4^+$	3123.2		6611.0	2^+		
		5555.5		4178.32	3^-		
9737.5	3^-	1987.7	5	7749.7	2^-		
		2065.3	16	7672.1	$(3)^-$		
		2490.0	47	7247.4	$(1,2,3)^-$		
		2600.9	42	7136.5	$(1^-, 2^+)$		
		2870.5	5	6866.9	$(1^+, 2^+)$		
		2900.9	100	6836.50	3^-		
		3126.4	21	6611.0	2^+		
		3880.6	42	5856.65	3^-		
		3901.3	53	5836.0	1^-		
		4763.1	26	4974.05	2^-		
		4785.8	4	4951.4	2^+		
		5297.0	84	4440.11	2^+		
		5322.7	<5	4414.40	4^+		
		5408.0	<5	4329.1	$(0,1,2)^+$		
		5558.7	11	4178.32	3^-		
		7766.2	68	1970.38	2^+		
		9736.1	1	0.0	0^+		
9764.5	$(3^-, 4^-, 5^-)$	2505.8	5	7258.6	3^-		
		2927.9	49	6836.50	3^-		
		3907.6	11	5856.65	3^-		
		4593.1	100	5171.13	5^-		
		5349.7	95	4414.40	4^+		
		5435.0	<5	4329.1	$(0,1,2)^+$		
		5585.7	22	4178.32	3^-		
		7793.2	<3	1970.38	2^+		
		5371.7	100	4440.11	2^+		
		5397.4	<6	4414.40	4^+		
9812.2	$(1,2,3^-)$	5482.7	47	4329.1	$(0,1,2)^+$		
		5633.4	24	4178.32	3^-		
		7840.9	79	1970.38	2^+		
		9810.8	44	0.0	0^+		
		2525.9	100	7336.6	3^+	M1(+E2)	-0.07 10
		3251.4	24	6611.0	2^+		
		5422.1	94	4440.11	2^+	(M1+)E2	
9862.6	3^+	5447.8	<9	4414.40	4^+		
		5533.0	<9	4329.1	$(0,1,2)^+$		
		5683.8	24	4178.32	3^-	E1(+M2)	+1.0 +16-7
		7891.3	58	1970.38	2^+	M1+E2	>+8

Adopted Levels, Gammas (continued)

<u>$\gamma(^{36}\text{Ar})$ (continued)</u>							Comments
<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>$E_\gamma^\dagger$</u>	<u>$I_\gamma^\dagger$</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.[‡]</u>	
9862.6	3 ⁺	9861.1	3	0.0	0 ⁺		
9878.6	2 ⁺ ,3 ⁺	2541.9	56	7336.6	3 ⁺		
		3267.4	100	6611.0	2 ⁺		
		4021.9	8	5856.65	3 ⁻		
		5438.0	75	4440.11	2 ⁺		
		5463.8	31	4414.40	4 ⁺		
		5549.0	<1	4329.1	(0,1,2) ⁺		
		5699.8	8	4178.32	3 ⁻		
		7907.3	<3	1970.38	2 ⁺		
		9877.1	<1	0.0	0 ⁺		
9889.3		2641.8	2	7247.4	(1,2,3) ⁻		
		3278.1	2	6611.0	2 ⁺		
		3993.1	3	5895.92	4 ⁻		
		4032.4	3	5856.65	3 ⁻		
		4053.1	5	5836.0	1 ⁻		
		4937.5	5	4951.4	2 ⁺		
		5448.7	17	4440.11	2 ⁺		
		5474.5	<2	4414.40	4 ⁺		
		5559.7	<2	4329.1	(0,1,2) ⁺		
		5710.5	17	4178.32	3 ⁻		
		7918.0	100	1970.38	2 ⁺		
		9887.8	2	0.0	0 ⁺		
9902.1	4 ⁺	2229.9	8	7672.1	(3) ⁻		
		2565.4	14	7336.6	3 ⁺		
		3065.5	30	6836.50	3 ⁻		
		3684.6	5	6217.3	5 ⁻		
		4730.6	16	5171.13	5 ⁻		
		4950.3	24	4951.4	2 ⁺		
		5461.5	19	4440.11	2 ⁺		
		5487.3	8	4414.40	4 ⁺		
		5572.5	<3	4329.1	(0,1,2) ⁺		
		5723.3	50	4178.32	3 ⁻		
		7930.8	100	1970.38	2 ⁺		
9927.0	8 ⁺	2160.0	3	100	7767.0	6 ⁺	E_γ, I_γ : from $^{24}\text{Mg}(^{20}\text{Ne}, 2\alpha\gamma)$.
9927.4	5 ⁻	2668.7	8	7258.6	3 ⁻		
		3090.8	10	6836.50	3 ⁻		
		3709.9	2	6217.3	5 ⁻		
		3790.7	5	6136.5	4 ⁺	E1	
		4031.2	3	5895.92	4 ⁻		
		4070.5	16	5856.65	3 ⁻	E2	
		4755.9	15	5171.13	5 ⁻		
		5511.5	100	4414.40	4 ⁺	E1	

Adopted Levels, Gammas (continued)

						$\gamma(^{36}\text{Ar})$ (continued)					
$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π	$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π
9927.4	5^-	5597.8	<2	4329.1	$(0,1,2)^+$	9992.9		4821.4	54	5171.13	5^-
		5748.6	3	4178.32	3^-			5018.5	5	4974.05	2^-
		7956.1	<2	1970.38	2^+			5578.0	23	4414.40	4^+
		9942.5	$(2,3^-)$	2605.8	3^+			5663.3	<5	4329.1	$(0,1,2)^+$
		2695.0		7247.4	$(1,2,3)^-$			5814.1	100	4178.32	3^-
		2805.9		7136.5	$(1^-,2^+)$			8021.6	15	1970.38	2^+
		3105.9		6836.50	3^-			3391.2	16	6611.0	2^+
		3331.3		6611.0	2^+			5028.0	37	4974.05	2^-
		4106.2		5836.0	1^-			5561.8	25	4440.11	2^+
		4968.1		4974.05	2^-			5587.5	<8	4414.40	4^+
		4990.7		4951.4	2^+			5672.8	<8	4329.1	$(0,1,2)^+$
		5501.9		4440.11	2^+			5823.6	100	4178.32	3^-
		5527.6		<2	4414.40			8031.6	<10	1970.38	2^+
		5612.9		<2	4329.1			10000.9	18	0.0	0^+
		5763.7		2	4178.32			5629.5	<1	4414.40	4^+
		7971.5		100	1970.38			5714.8	<1	4329.1	$(0,1,2)^+$
9956.9	$(1,2^+)$	9941.5	2	0.0	0^+	10044.4	1^-	5865.6	<1	4178.32	3^-
		2709.4	0.3	7247.4	$(1,2,3)^-$			8073.1	<1	1970.38	2^+
		4120.6	2	5836.0	1^-			10042.9	100	0.0	0^+
		4762.2	2	5194.4	$(0^+,1^+,2^+,3^-)$			5610.0	11	4440.11	2^+
		4982.5	3	4974.05	2^-			5635.7	11	4414.40	4^+
		5516.3	5	4440.11	2^+			5871.8	63	4178.32	3^-
		5542.0	<0.2	4414.40	4^+			8079.3	<7	1970.38	2^+
		5627.3	0.2	4329.1	$(0,1,2)^+$			10049.1	100	0.0	0^+
		5778.1	<0.5	4178.32	3^-			5102.3	13	4974.05	2^-
		7985.6	1	1970.38	2^+			5636.1	19	4440.11	2^+
		9955.4	100	0.0	0^+			5661.8	<4	4414.40	4^+
		2735.7	0.6	7247.4	$(1,2,3)^-$			5747.1	<4	4329.1	$(0,1,2)^+$
		4146.9	1	5836.0	1^-			5897.9	100	4178.32	3^-
		4788.5	2	5194.4	$(0^+,1^+,2^+,3^-)$			8105.3	56	1970.38	2^+
		5008.8	2	4974.05	2^-			10075.2	4	0.0	0^+
9983.2	$1^+,(2^+)$	5542.6	6	4440.11	2^+	10094.9	2^+	2384.5	20	7710.3	1^+
		5568.3	<0.1	4414.40	4^+			2758.2	20	7336.6	3^+
		5653.6	0.6	4329.1	$(0,1,2)^+$			4900.1	8	5194.4	$(0^+,1^+,2^+,3^-)$
		8011.9	4	1970.38	2^+			5120.5	6	4974.05	2^-
		9981.7	100	0.0	0^+			5654.3	8	4440.11	2^+
		1860.9	8	8131.9	1^+			5680.0	<4	4414.40	4^+
		2419.7	5	7573.1	4^-			5765.3	2	4329.1	$(0,1,2)^+$
		3157.6	8	6835.16	4^-			5916.1	24	4178.32	3^-
		3775.4	10	6217.3	5^-			8123.5	12	1970.38	2^+
		4096.7	26	5895.92	4^-			10093.4	100	0.0	0^+
		4136.0	3	5856.65	3^-			3488.2	9	6611.0	2^+
						10099.4	1^-				
9992.9						9992.9					

Adopted Levels, Gammas (continued)

$\gamma(^{36}\text{Ar})$ (continued)

$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π
10099.4	1^-	5124.0	1	4974.05	2^-
		5658.8	7	4440.11	2^+
		5684.5	<1	4414.40	4^+
		5769.8	1	4329.1	$(0,1,2)^+$
		5920.6	<2	4178.32	3^-
		8128.0	4	1970.38	2^+
		10097.9	100	0.0	0^+
10139.5	$(2^+, 3^-)$	2802.8	6	7336.6	3^+
		5187.7	17	4951.4	2^+
		5724.6	62	4414.40	4^+
		5809.9	<4	4329.1	$(0,1,2)^+$
		5960.7	100	4178.32	3^-
		8168.1	4	1970.38	2^+
		10138.0	4	0.0	0^+
10143.0	$(1^-, 2)$	3006.4	7	7136.5	$(1^-, 2^+)$
		5168.6	24	4974.05	2^-
		5191.2	5	4951.4	2^+
		5702.4	5	4440.11	2^+
		5728.1	2	4414.40	4^+
		5813.4	<2	4329.1	$(0,1,2)^+$
		5964.2	7	4178.32	3^-
		8171.6	88	1970.38	2^+
		10141.5	100	0.0	0^+
10149.6	$(3^-, 4)$	2477.4	11	7672.1	$(3)^-$
		2576.4	11	7573.1	4^-
		2890.9	17	7258.6	3^-
		3009.7	44	7139.6	3^+
		3313.0	33	6836.50	3^-
		3314.3	72	6835.16	4^-
		3932.1	94	6217.3	5^-
		4253.4	6	5895.92	4^-
		4978.1	100	5171.13	5^-
		5734.7	67	4414.40	4^+
		5820.0	<11	4329.1	$(0,1,2)^+$
		5970.8	89	4178.32	3^-
		8178.2	<11	1970.38	2^+
		10148.1	11	0.0	0^+
		2495.2	18	7672.1	$(3)^-$
10167.4	3^-	4310.5	30	5856.65	3^-
		5193.0	8	4974.05	2^-
		5726.8	25	4440.11	2^+
		5752.5	100	4414.40	4^+

Adopted Levels, Gammas (continued)

<u>$\gamma(^{36}\text{Ar})$ (continued)</u>							Comments
<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>$E_\gamma^\dagger$</u>	<u>$I_\gamma^\dagger$</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.[‡]</u>	
10167.4	3^-	5837.8	<5	4329.1	(0,1,2) ⁺		
		5988.6	32	4178.32	3^-		
		8196.0	25	1970.38	2^+		
		10165.9	13	0.0	0^+		
10173.4	$(1^-, 2^+)$	2294.3	1	7879	(1,2) ⁻		
		3562.2	1	6611.0	2^+		
		5732.8	2	4440.11	2^+		
		5758.5	<1	4414.40	4^+		
		5843.8	1	4329.1	(0,1,2) ⁺		
		5994.5	<1	4178.32	3^-		
		8202.0	10	1970.38	2^+		
		10171.9	100	0.0	0^+		
		10184	100	0.0	0^+	E1	$E_\gamma, I_\gamma, \text{Mult.}: \text{ from } ^{32}\text{S}(\alpha, \gamma): \text{res.}$
10193.6	$(3^-, 4, 5, 6^+)$	5022.1	15	5171.13	5^-		
		5778.7	100	4414.40	4^+		
		5864.0	<7	4329.1	(0,1,2) ⁺		
		6014.7	<5	4178.32	3^-		
10217	2^+	10215		0.0	0^+	E2	Mult.: from $^{32}\text{S}(\alpha, \gamma): \text{res.}$
10220.3	$4^{(-)}$	3080.6	20	7139.6	3^+	(E1)	
		3574.5	4	6645.6	(2 ⁺ , 3 ⁺ , 4 ⁺)		
		3864.1	7	6356.0	4^+		
		5805.4	100	4414.40	4^+		
		5890.7	<1	4329.1	(0,1,2) ⁺		
		6041.4	3	4178.32	3^-		
		8248.9	1	1970.38	2^+		
		10218.7	<0.1	0.0	0^+		
		2240.0	15	8015.9	(3,4) ⁻		
10256.0	$(3^-, 4)$	2583.8	15	7672.1	(3) ⁻		
		2682.8	7	7573.1	4^-		
		2902.0	7	7353.9	6^-		
		2919.3	15	7336.6	3^+		
		3420.7	63	6835.16	4^-		
		3531.8	7	6724	NOT (2) ⁺		
		4038.5	56	6217.3	5^-		
		5084.5	100	5171.13	5^-		
		5841.1	33	4414.40	4^+		
		5926.4	<7	4329.1	(0,1,2) ⁺		
		6077.1	52	4178.32	3^-		
		8284.6	<7	1970.38	2^+		
		10254.4	<4	0.0	0^+		
		5086.0	7	5171.13	5^-		
10257.5	$(3^-, 4^+)$						

Adopted Levels, Gammas (continued)

$\gamma(^{36}\text{Ar})$ (continued)

$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π
10257.5	$(3^-, 4^+)$	5842.6	100	4414.40	4^+
		5927.9	<3	4329.1	$(0, 1, 2)^+$
		6078.6	<5	4178.32	3^-
		8286.1	3	1970.38	2^+
		10255.9	<1	0.0	0^+
10267.3	1^-	3400.2	4	6866.9	$(1^+, 2^+)$
		4410.4	2	5856.65	3^-
		5072.5	4	5194.4	$(0^+, 1^+, 2^+, 3^-)$
		5826	8	4440.11	2^+
		5852.4	<2	4414.40	4^+
		5937.7	8	4329.1	$(0, 1, 2)^+$
		6088.4	<4	4178.32	3^-
		8295.9	100	1970.38	2^+
		10265.7	64	0.0	0^+
		2254.7	29	8015.9	$(3, 4)^-$
10271.7	$(3^-, 4^-, 5^-)$	2599.5	21	7672.1	$(3)^-$
		3436.4	92	6835.16	4^-
		4054.2	54	6217.3	5^-
		4414.8	25	5856.65	3^-
		5100.2	100	5171.13	5^-
		5856.8	13	4414.40	4^+
		5942.1	<4	4329.1	$(0, 1, 2)^+$
		6092.8	83	4178.32	3^-
		2944.4	41	7336.6	3^+
		3669.9	100	6611.0	2^+
10281.1	3^-	5109.6	50	5171.13	5^-
		5306.6	77	4974.05	2^-
		5329.3	95	4951.4	2^+
		5840.5	50	4440.11	2^+
		5866.2	23	4414.40	4^+
		5951.5	<14	4329.1	$(0, 1, 2)^+$
		6102.2	18	4178.32	3^-
		8309.7	<9	1970.38	2^+
		10279.5	<5	0.0	0^+
		2964.8	3	7336.6	3^+
10301.5	4^+	3464.8	1	6836.50	3^-
		4164.7	0.7	6136.5	4^+
		5860.9	14	4440.11	2^+
		5886.6	13	4414.40	4^+
		5971.9	<1	4329.1	$(0, 1, 2)^+$
		6122.6	7	4178.32	3^-
		8330.1	100	1970.38	2^+

Adopted Levels, Gammas (continued)

$\gamma(^{36}\text{Ar})$ (continued)						
$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π	Mult. [‡]
10301.5	4 ⁺	10299.9	<0.4	0.0	0 ⁺	
10308.7	(2,3) ⁻	2972.0	11	7336.6	3 ⁺	
		3050.0	5	7258.6	3 ⁻	
		4412.5	9	5895.92	4 ⁻	
		5868.1	48	4440.11	2 ⁺	
		5893.8	<7	4414.40	4 ⁺	
		5979.1	<10	4329.1	(0,1,2) ⁺	
		6129.8	41	4178.32	3 ⁻	
		8337.3	100	1970.38	2 ⁺	
10319.5	2 ⁺	4462.6	6	5856.65	3 ⁻	
		5345.0	6	4974.05	2 ⁻	
		5878.9	3	4440.11	2 ⁺	
		5904.6	<1	4414.40	4 ⁺	
		5989.9	<1	4329.1	(0,1,2) ⁺	
		6140.6	1	4178.32	3 ⁻	
		8348.1	27	1970.38	2 ⁺	
		10317.9	100	0.0	0 ⁺	
10328	2 ⁺	8356.6	35 20	1970.38	2 ⁺	M1
		10326	100	0.0	0 ⁺	E2
10329.0	(3 ⁻ ,4 ⁻ ,5 ⁻)	3070.3	23	7258.6	3 ⁻	$E_\gamma, I_\gamma, \text{Mult.}: \text{from } ^{32}\text{S}(\alpha, \gamma): \text{res.}$
		3492.3	38	6836.50	3 ⁻	$E_\gamma, I_\gamma, \text{Mult.}: \text{from } ^{32}\text{S}(\alpha, \gamma): \text{res.}$
		4432.8	19	5895.92	4 ⁻	
		5157.5	9	5171.13	5 ⁻	
		5914.1	100	4414.40	4 ⁺	
		5999.4	<4	4329.1	(0,1,2) ⁺	
		6150.1	<6	4178.32	3 ⁻	
		8357.6	<4	1970.38	2 ⁺	
10420.8	3 ⁻	2671.0	5	7749.7	2 ⁻	
		3162.1	9	7258.6	3 ⁻	
		3173.3	5	7247.4	(1,2,3) ⁻	
		3584.1	14	6836.50	3 ⁻	
		4525.6	7	5895.92	4 ⁻	
		4563.8	32	5856.65	3 ⁻	
		5446.3	2	4974.05	2 ⁻	
		5980.2	2	4440.11	2 ⁺	
		6005.9	18	4414.40	4 ⁺	
		6091.2	<2	4329.1	(0,1,2) ⁺	
		6241.9	100	4178.32	3 ⁻	
		8449.4	34	1970.38	2 ⁺	
10435.0	(1,2,3 ⁻)	3098.3	17	7336.6	3 ⁺	
		4598.7	8	5836.0	1 ⁻	

Adopted Levels, Gammas (continued)

<u>$\gamma(^{36}\text{Ar})$ (continued)</u>							Comments
<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>$E_\gamma^\dagger$</u>	<u>$I_\gamma^\dagger$</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.[‡]</u>	
10435.0	(1,2,3 ⁻)	5994.4	17	4440.11	2 ⁺		
		6020.1	<2	4414.40	4 ⁺		
		6256.1	17	4178.32	3 ⁻		
		8463.6	50	1970.38	2 ⁺		
		10433.4	100	0.0	0 ⁺		
10488.1	3 ⁻	6310.1	70 40	4178.32	3 ⁻	M1	$E_\gamma, I_\gamma, \text{Mult.}$: from $^{32}\text{S}(\alpha, \gamma)$:res.
		8517.5	100	1970.38	2 ⁺	E1	$E_\gamma, I_\gamma, \text{Mult.}$: from $^{32}\text{S}(\alpha, \gamma)$:res.
		10487		0.0	0 ⁺		E_γ : from $^{32}\text{S}(\alpha, \gamma)$:res.
10500.2	(1,2,3) ⁻	3241.4	31	7258.6	3 ⁻		
		3252.6	31	7247.4	(1,2,3) ⁻		
		3663.5	19	6836.50	3 ⁻		
		3889.0	31	6611.0	2 ⁺		
		4663.9	46	5836.0	1 ⁻		
		5525.7	42	4974.05	2 ⁻		
		6085.3	<8	4414.40	4 ⁺		
		6170.5	<12	4329.1	(0,1,2) ⁺		
		6321.3	100	4178.32	3 ⁻		
		8528.7	77	1970.38	2 ⁺		
		10498.6	8	0.0	0 ⁺		
		4703.3	3	5836.0	1 ⁻		
		5565.1	4	4974.05	2 ⁻		
10539.6	3 ⁻	6098.9	15	4440.11	2 ⁺		
		6210.0	<3	4329.1	(0,1,2) ⁺		
		6360.7	<4	4178.32	3 ⁻		
		8568.1	100	1970.38	2 ⁺		
		10537.9	6	0.0	0 ⁺		
		2988.9	35	7573.1	4 ⁻		
		3225.3	23	7336.6	3 ⁺		
10562.1	3 ⁻	3303.3	12	7258.6	3 ⁻		
		3314.5	12	7247.4	(1,2,3) ⁻		
		3726.7	38	6835.16	4 ⁻		
		3950.9	15	6611.0	2 ⁺		
		4344.5	19	6217.3	5 ⁻		
		4705.1	12	5856.65	3 ⁻		
		5587.6	100	4974.05	2 ⁻		
		6232.4	<8	4329.1	(0,1,2) ⁺		
		6383.2	77	4178.32	3 ⁻		
		8590.6	20	1970.38	2 ⁺		
		10560.4	4	0.0	0 ⁺		
		2566.9	5	8015.9	(3,4) ⁻		
		2910.7	4	7672.1	(3) ⁻		

Adopted Levels, Gammas (continued)

<u>$\gamma(^{36}\text{Ar})$ (continued)</u>								
<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>$E_\gamma^\dagger$</u>	<u>$I_\gamma^\dagger$</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.[‡]</u>	<u>$\delta^\ddagger$</u>	<u>Comments</u>
10582.9	5^-	3228.8	35	7353.9	6^-			
		3324.1	2	7258.6	3^-			
		4365.3	100	6217.3	5^-			
		4686.7	5	5895.92	4^-			
		5411.3	12	5171.13	5^-			
		5608.4	1	4974.05	2^-			
		6167.9	<2	4414.40	4^+			
		6253.2	<2	4329.1	$(0,1,2)^+$			
		6404.0	11	4178.32	3^-			
		8611.4	1	1970.38	2^+			
10596	3^-	8624.5	100	1970.38	2^+	E1		$E_\gamma, I_\gamma, \text{Mult.}$: from $^{32}\text{S}(\alpha, \gamma)$:res.
		10594	<6	0.0	0^+			E_γ, I_γ : from $^{32}\text{S}(\alpha, \gamma)$:res.
10615.6	4^-	3042.4	50	7573.1	4^-	M1+E2	+0.18	+12-44
		3278.8	6	7336.6	3^+			
		3356.8	9	7258.6	3^-	M1		
		3780.2	100	6835.16	4^-	M1		
		4398.0	43	6217.3	5^-	M1+E2	-0.19	6
		4719.4	38	5895.92	4^-	M1(+E2)	+0.11	+10-38
		4758.5	34	5856.65	3^-	M1		
		6200.6	25	4414.40	4^+			
		6285.9	<3	4329.1	$(0,1,2)^+$			
		6436.7	<3	4178.32	3^-			
		8644.1	6	1970.38	2^+			
		10613.9	<0.6	0.0	0^+			
		3376.9	6	7258.6	3^-			
10635.7	1^-	4799.4	4	5836.0	1^-			
		5661.2	4	4974.05	2^-			
		6195.0	10	4440.11	2^+			
		6220.7	<1	4414.40	4^+			
		6306.0	<1	4329.1	$(0,1,2)^+$			
		6456.8	3	4178.32	3^-			
		8664.2	100	1970.38	2^+			
		10634.0	0.6	0.0	0^+			
		8679.1	<16	1970.38	2^+			E_γ, I_γ : from $^{32}\text{S}(\alpha, \gamma)$:res.
		10648.6	100	0.0	0^+	E1		$E_\gamma, I_\gamma, \text{Mult.}$: from $^{32}\text{S}(\alpha, \gamma)$:res.
10675.9	5	3321.8	30	7353.9	6^-	D(+Q)	+0.04	4
		4319.6	13	6356.0	4^+	D+Q	-0.07	4
		4458.3	100	6217.3	5^-	D(+Q)	-0.04	8
		4779.6	15	5895.92	4^-			
		5504.3	8	5171.13	5^-	D(+Q)	-0.03	17
		6260.9	<7	4414.40	4^+			

Adopted Levels, Gammas (continued)

$\gamma(^{36}\text{Ar})$ (continued)									
$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π	Mult. [‡]	$\delta^\ddagger$	Comments	
10675.9	5	6346.2	<5	4329.1	(0,1,2) ⁺				
		6497.0	<5	4178.32	3 ⁻				
10700.4	2 ⁺	10674.2	<2	0.0	0 ⁺				
		3267.9	7	7432.3	1 ⁺				
		3452.8	5	7247.4	(1,2,3) ⁻				
		3521.3	37	7178.9	(1,2) ⁺				
		3833.3	5	6866.9	(1 ⁺ ,2 ⁺)				
		4089.2	1	6611.0	2 ⁺				
		4864.1	7	5836.0	1 ⁻				
		5725.9	7	4974.05	2 ⁻				
		5748.5	36	4951.4	2 ⁺				
		6259.7	11	4440.11	2 ⁺				
		6285.4	<1	4414.40	4 ⁺				
		6370.7	1	4329.1	(0,1,2) ⁺				
		6521.5	100	4178.32	3 ⁻	E1			
		8728.9	27	1970.38	2 ⁺	M1+E2	+0.18 //		
		10698.7	14	0.0	0 ⁺	E2			
10790.1	2 ⁺	8818.6	100	1970.38	2 ⁺	M1		E _γ , I _γ , Mult.: from ³² S(α,γ):res.	
10808.9	(1 ⁻ ,2,3 ⁻)	10788.1	<7	0.0	0 ⁺			E _γ , I _γ : from ³² S(α,γ):res.	
		2676.9	5	8131.9	1 ⁺				
		3235.6	7	7573.1	4 ⁻				
		3454.8	7	7353.9	6 ⁻				
		3550.1	3	7258.6	3 ⁻				
		3972.2	2	6836.50	3 ⁻				
		4452.6	2	6356.0	4 ⁺				
		4591.3	3	6217.3	5 ⁻				
		4912.6	3	5895.92	4 ⁻				
		4951.9	3	5856.65	3 ⁻				
		5637.3	2	5171.13	5 ⁻				
		5834.3	13	4974.05	2 ⁻				
		6393.9	100	4414.40	4 ⁺				
		6479.2	<2	4329.1	(0,1,2) ⁺				
		6629.9	3	4178.32	3 ⁻				
		8837.4	3	1970.38	2 ⁺				
10823.4	(1 ⁻ ,3 ⁻ ,4 ⁺)	10807.2	7	0.0	0 ⁺				
		4605.8	100	6217.3	5 ⁻				
		8860.8	100	1970.38	2 ⁺				
		4489.4	100	6356.0	4 ⁺				
10845.7		4628.1	72	6217.3	5 ⁻				
10852.0	2 ⁺	8880.4	100	1970.38	2 ⁺				
10853.8	0 ⁺	2721.8	100 23	8131.9	1 ⁺				

Adopted Levels, Gammas (continued)

$\gamma(^{36}\text{Ar})$ (continued)						
$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π	Mult. [‡]
10853.8	0 ⁺	3143.4	54 23	7710.3	1 ⁺	
10854	3 ⁻	8882.4	100	1970.38	2 ⁺	E1
		10852	<20	0.0	0 ⁺	
10906.0	(2 ⁺ to 5 ⁻)	2890.0	100	8015.9	(3,4) ⁻	
		3233.7	24	7672.1	(3) ⁻	
		3332.7	81	7573.1	4 ⁻	
		3647.2	24	7258.6	3 ⁻	
		3658.4	5	7247.4	(1,2,3) ⁻	
		4069.3	14	6835.16	4 ⁻	
		4688.4	100	6217.3	5 ⁻	
		5009.7	57	5895.92	4 ⁻	
		5049.0	38	5856.65	3 ⁻	
		5734.4	14	5171.13	5 ⁻	
		6491.0	<5	4414.40	4 ⁺	
		6576.3	<5	4329.1	(0,1,2) ⁺	
		6727.0	14	4178.32	3 ⁻	
		8934.4	5	1970.38	2 ⁺	
		10904.2	<1	0.0	0 ⁺	
10955.7	(2 ⁺ to 5 ⁻)	2939.7		8015.9	(3,4) ⁻	
		3696.9	10	7258.6	3 ⁻	
		3708.1 [#]	10 [#]	7247.4	(1,2,3) ⁻	
		4119.0	17	6836.50	3 ⁻	
		4344.2	21	6611.0	2 ⁺	
		5059.4	7	5895.92	4 ⁻	
		5784.1	10	5171.13	5 ⁻	
		6515.0	36	4440.11	2 ⁺	
		6540.7	21	4414.40	4 ⁺	
		6776.7	100	4178.32	3 ⁻	
		8984.1	10	1970.38	2 ⁺	
10968.1	1,2	5993.5	13	4974.05	2 ⁻	
		6553.1	<1	4414.40	4 ⁺	
		6789.1	4	4178.32	3 ⁻	
		8996.5	24	1970.38	2 ⁺	
		10966.3	100	0.0	0 ⁺	
11027.7	(1 ⁻ to 5 ⁻)	4671.4	11	6356.0	4 ⁺	
		6586.9	6	4440.11	2 ⁺	
		6612.7	96	4414.40	4 ⁺	
		6697.9	<4	4329.1	(0,1,2) ⁺	
		6848.7	<4	4178.32	3 ⁻	
		9056.1	100	1970.38	2 ⁺	
		11025.9	<0.6	0.0	0 ⁺	

$E_\gamma, I_\gamma, \text{Mult.}$: from $^{32}\text{S}(\alpha, \gamma)$:res.
 E_γ, I_γ : from $^{32}\text{S}(\alpha, \gamma)$:res.

Adopted Levels, Gammas (continued)

$\gamma(^{36}\text{Ar})$ (continued)							
$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π	Mult. [‡]	Comments
11040	2 ⁺	9068.4	100	1970.38	2 ⁺	M1	$E_\gamma, I_\gamma, \text{Mult.}$: from $^{32}\text{S}(\alpha, \gamma)$:res. E_γ, I_γ : from $^{32}\text{S}(\alpha, \gamma)$:res.
		11038	<7	0.0	0 ⁺		
11149.4	(1,2,3 ⁻)	5313.0	1	5836.0	1 ⁻		
		5954.5	6	5194.4	(0 ⁺ , 1 ⁺ , 2 ⁺ , 3 ⁻)		
		6708.6	2	4440.11	2 ⁺		
		6734.3	<1	4414.40	4 ⁺		
		6819.6	1	4329.1	(0, 1, 2) ⁺		
		6970.4	0.3	4178.32	3 ⁻		
		9177.8	10	1970.38	2 ⁺		
		11147.5	100	0.0	0 ⁺		
11182.3	(3 ⁺ to 6 ⁻)	2710.2	100	8472.0	(3 ⁻ , 4 ⁻ , 5 ⁻)		
		2849.7	21	8332.5	(3) ⁻		
		3828.2	33	7353.9	6 ⁻		
		4346.9	33	6836.50	3 ⁻		
		4964.6	14	6217.3	5 ⁻		
		6010.6	2	5171.13	5 ⁻		
		6767.2	30	4414.40	4 ⁺		
		6852.5	<2	4329.1	(0, 1, 2) ⁺		
		7003.3	<2	4178.32	3 ⁻		
11336.4	2 ⁺	3982.3	43	7353.9	6 ⁻		
		4199.6	22	7136.5	(1 ⁻ , 2 ⁺)		
		4499.6	17	6836.50	3 ⁻		
		5118.7	17	6217.3	5 ⁻		
		5440.0	96	5895.92	4 ⁻		
		6164.7	4	5171.13	5 ⁻		
		6361.8	13	4974.05	2 ⁻		
		6384.4	17	4951.4	2 ⁺		
		6895.6	22	4440.11	2 ⁺		
		6921.3	100	4414.40	4 ⁺		
		7006.6	<4	4329.1	(0, 1, 2) ⁺		
		7157.3	4	4178.32	3 ⁻		
		9364.7	65	1970.38	2 ⁺		
		11334.5	<4	0.0	0 ⁺		
11419.1		11419.1	100	0.0	0 ⁺		
11902.1	10 ⁺	1974.8 10	100	9927.0	8 ⁺		E_γ, I_γ : from $^{24}\text{Mg}(^{20}\text{Ne}, 2\alpha\gamma)$.
12748.5	10 ⁺	2821.4 4	100	9927.0	8 ⁺		E_γ, I_γ : from $^{24}\text{Mg}(^{20}\text{Ne}, 2\alpha\gamma)$.
15350.8	12 ⁺	2602.2 4	100.0 15	12748.5	10 ⁺		E_γ, I_γ : from $^{24}\text{Mg}(^{20}\text{Ne}, 2\alpha\gamma)$.
		3448.4 10	22.4 15	11902.1	10 ⁺		E_γ, I_γ : from $^{24}\text{Mg}(^{20}\text{Ne}, 2\alpha\gamma)$.
18298.6	14 ⁺	2947.7 5	100	15350.8	12 ⁺		E_γ, I_γ : from $^{24}\text{Mg}(^{20}\text{Ne}, 2\alpha\gamma)$.
22365.3	16 ⁺	4066.4 12	100	18298.6	14 ⁺		E_γ, I_γ : from $^{24}\text{Mg}(^{20}\text{Ne}, 2\alpha\gamma)$.

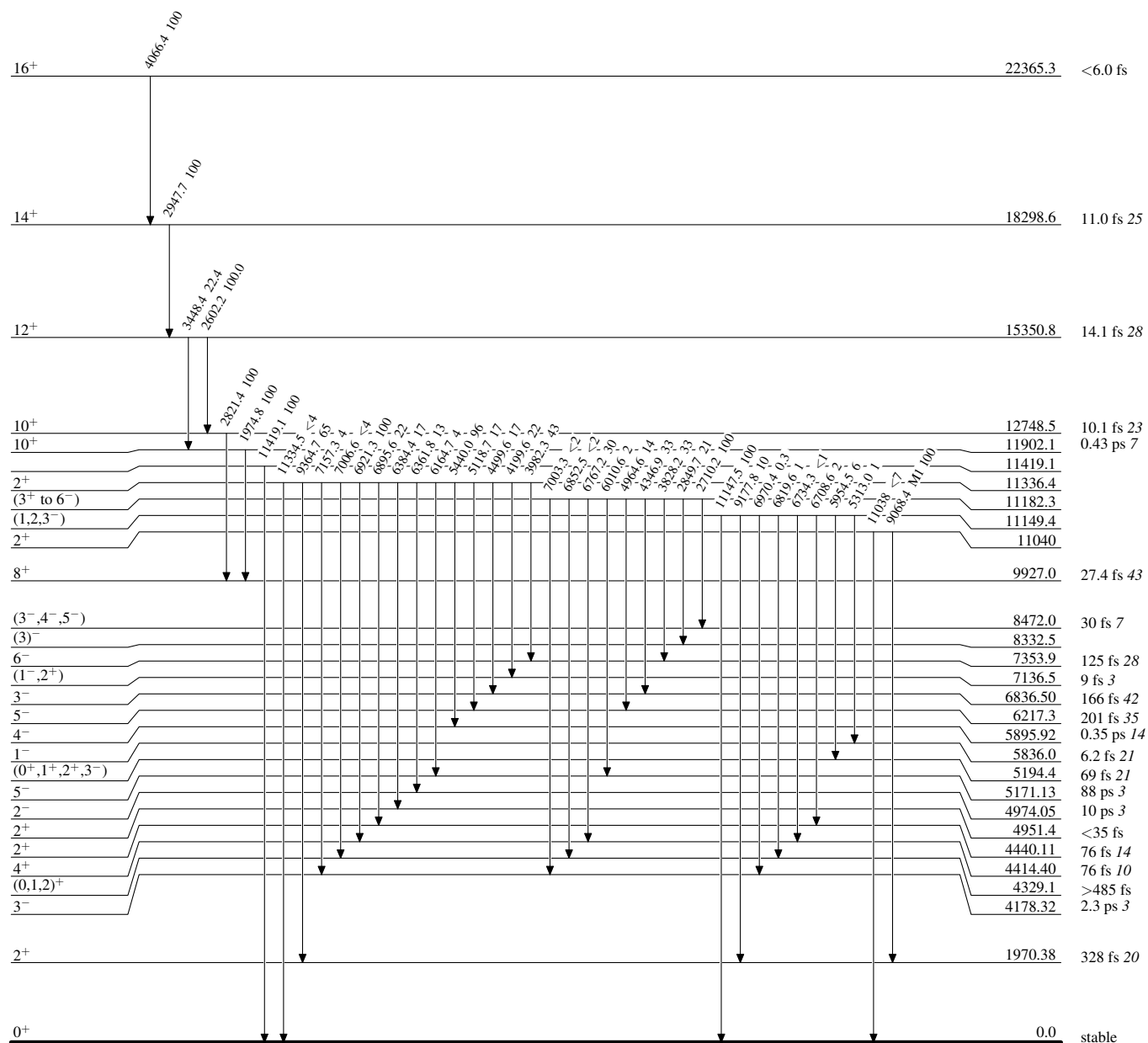
Adopted Levels, Gammas (continued)

$\gamma(^{36}\text{Ar})$ (continued)

† From ³⁵Cl(p, γ):res, unless noted otherwise.
‡ From ³⁵Cl(p, γ):res by angular correlations and polarization measurements, unless noted otherwise.
Multiply placed with undivided intensity.

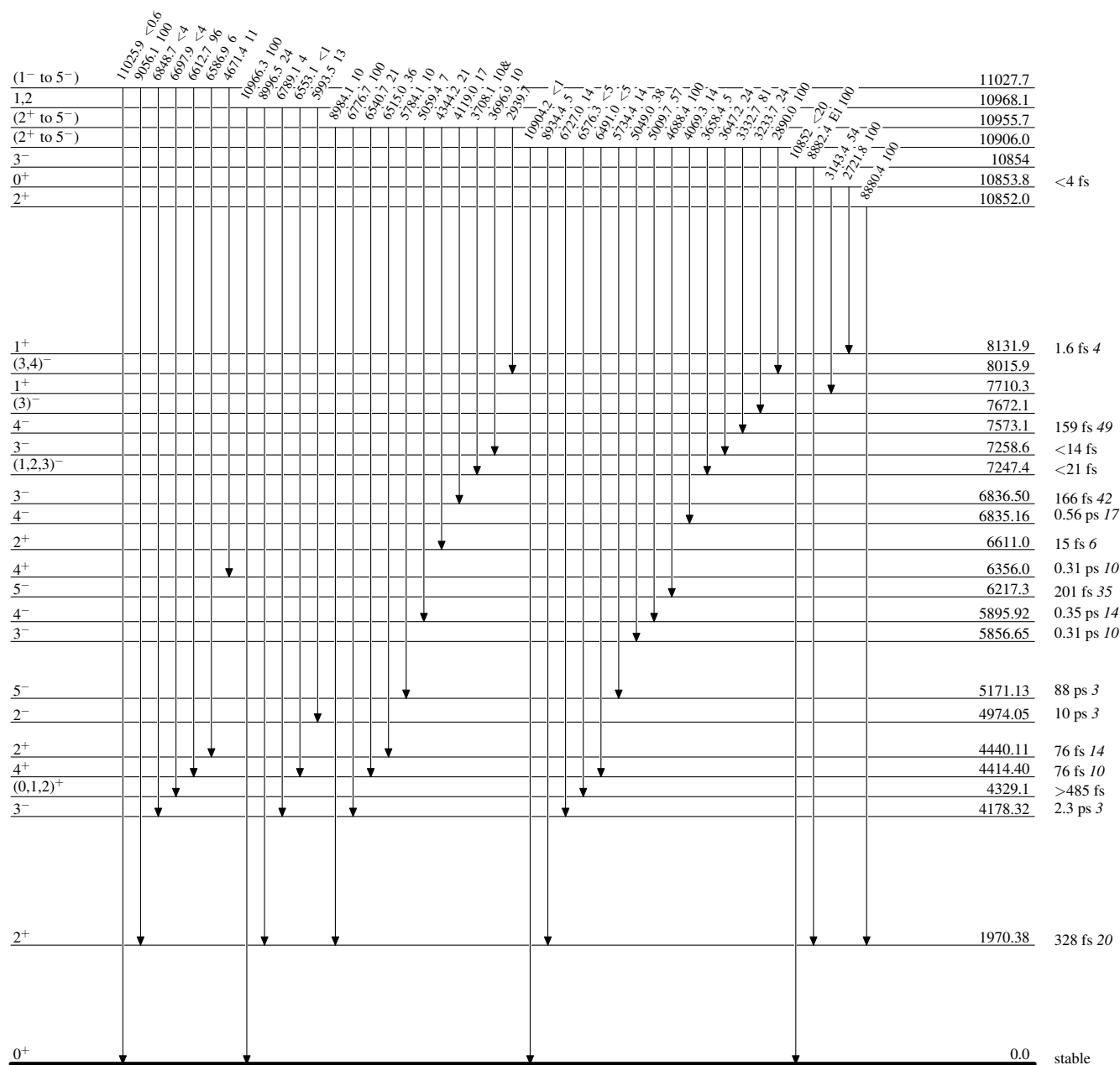
Adopted Levels, GammasLevel Scheme

Intensities: Relative photon branching from each level



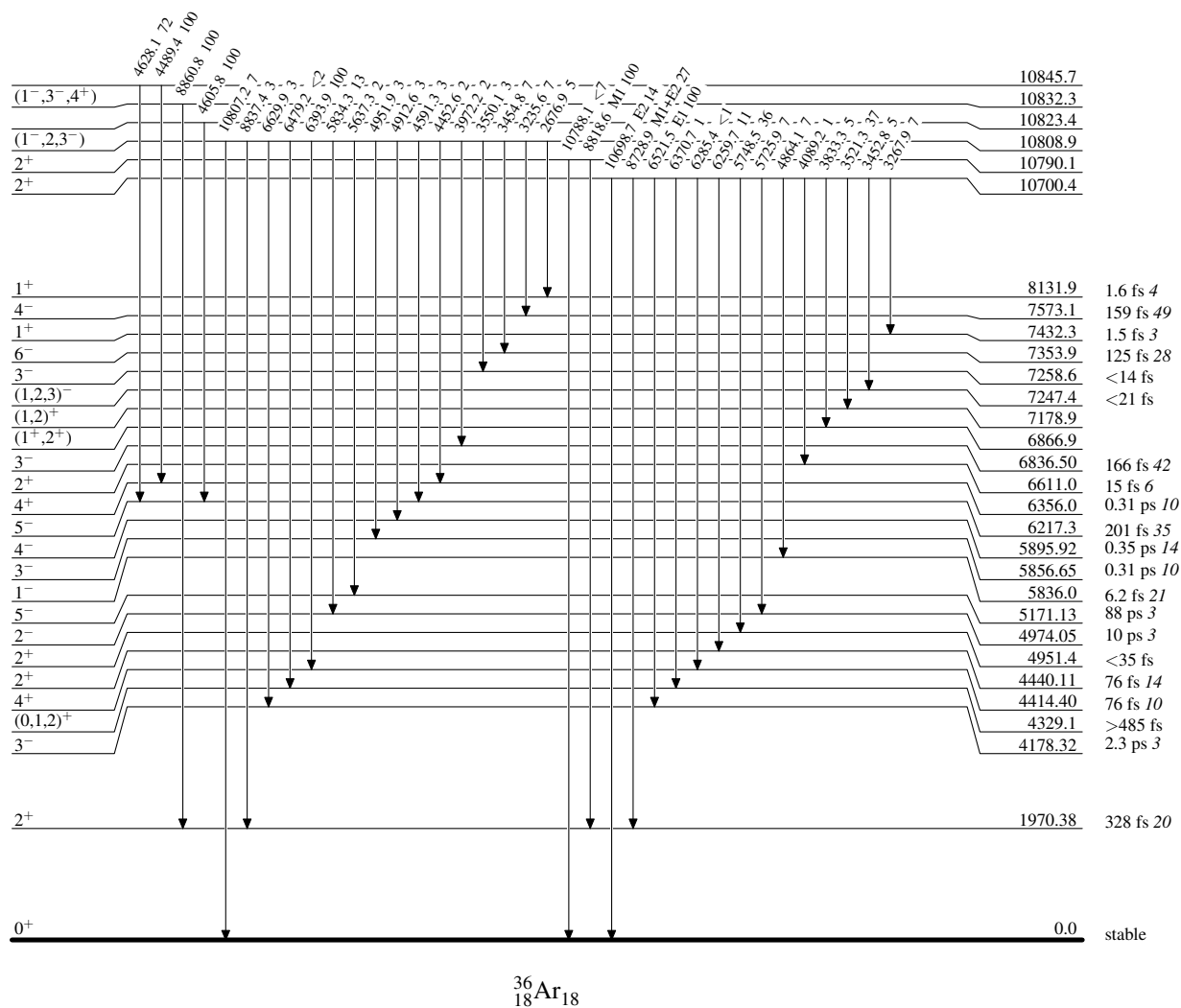
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level
& Multiplied placed: undivided intensity given



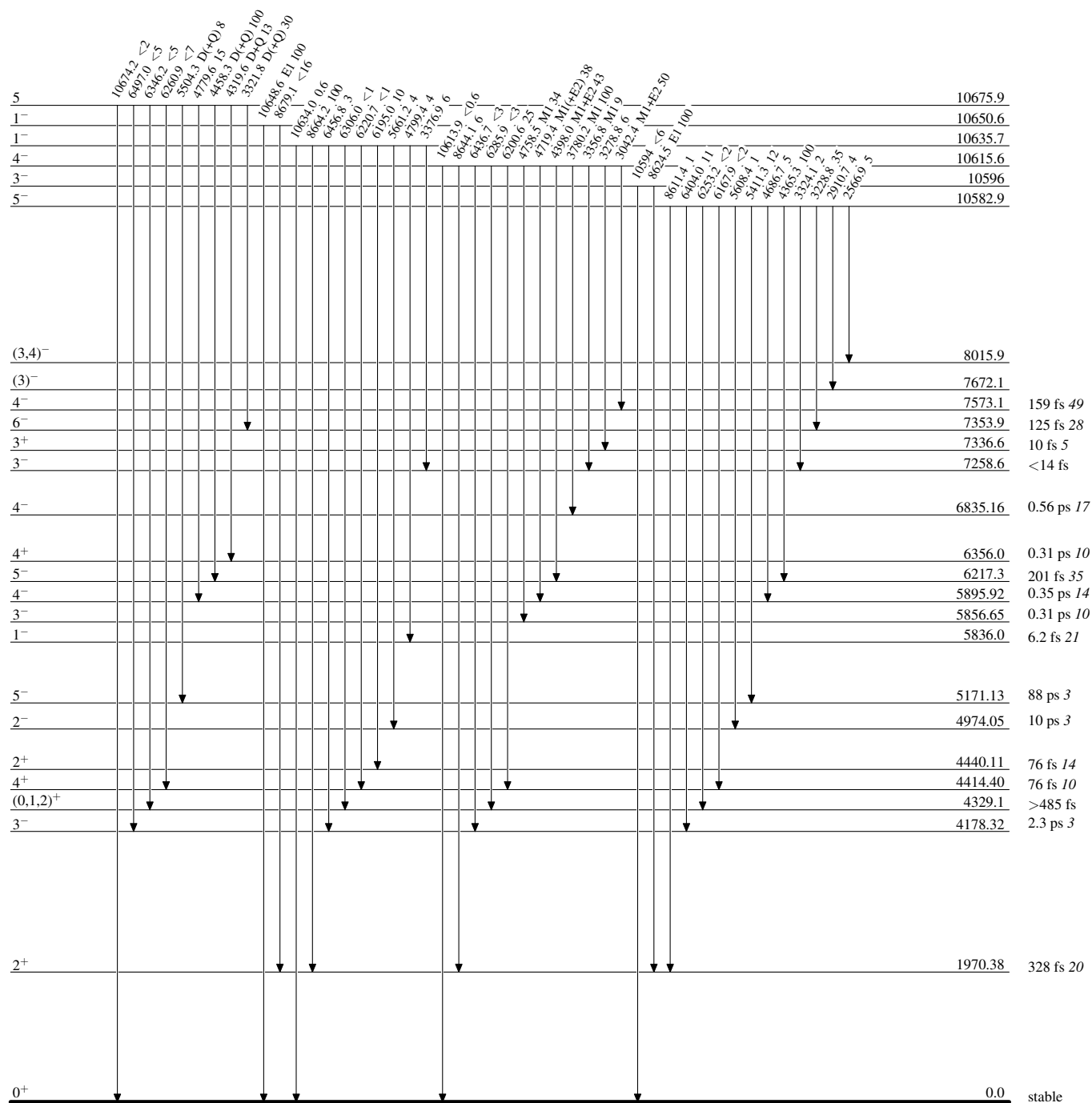
Adopted Levels, GammasLevel Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



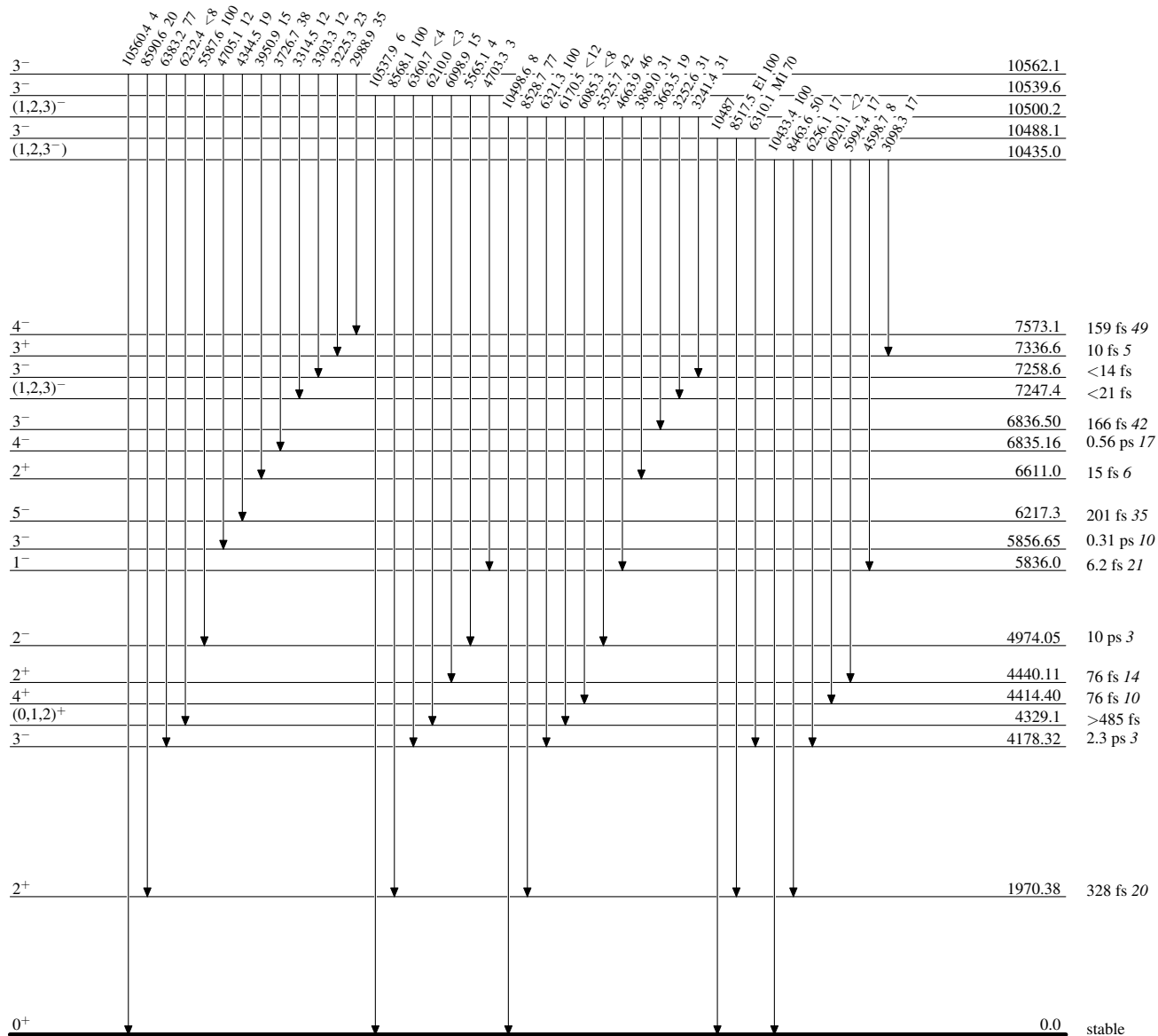
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



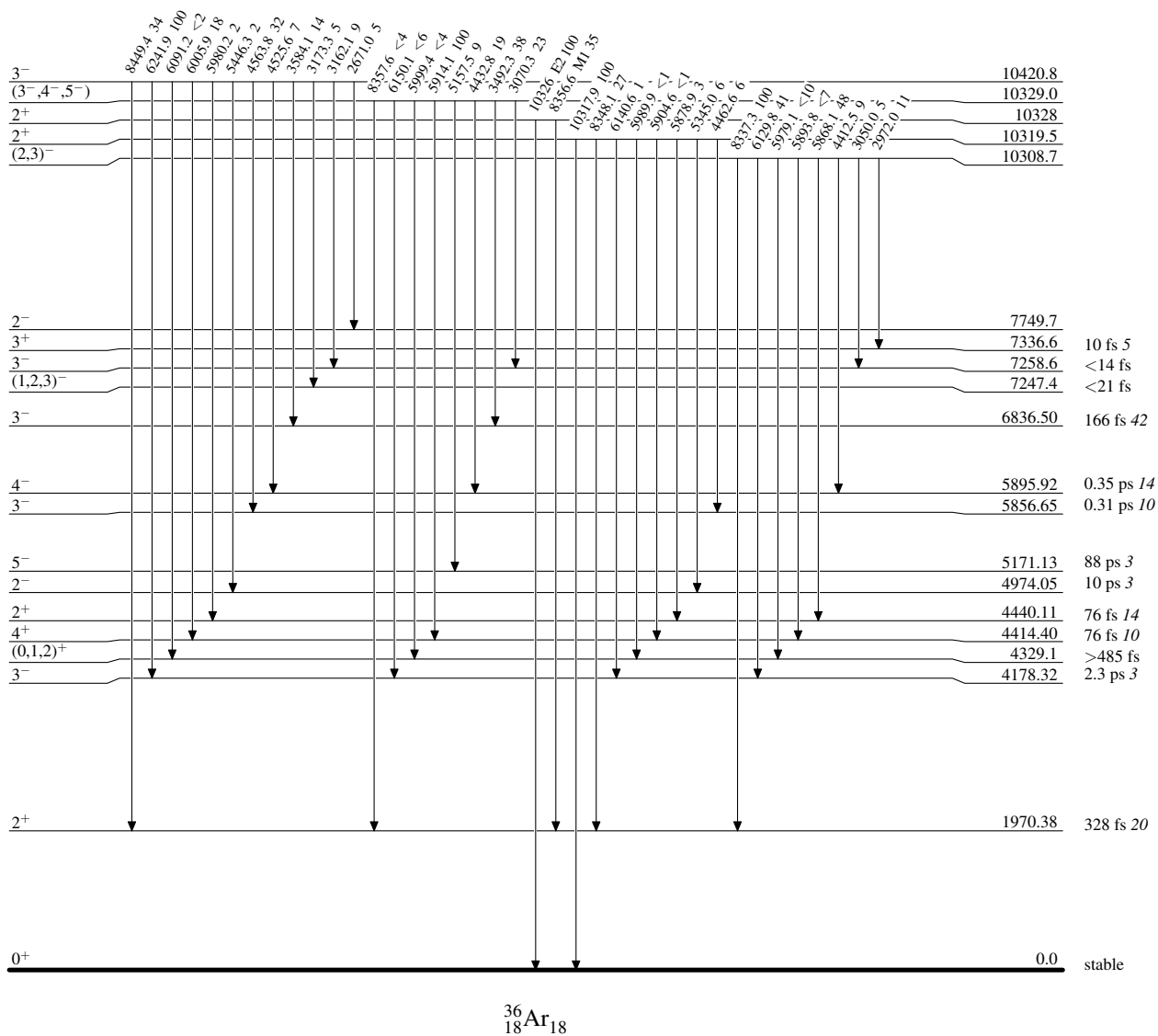
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



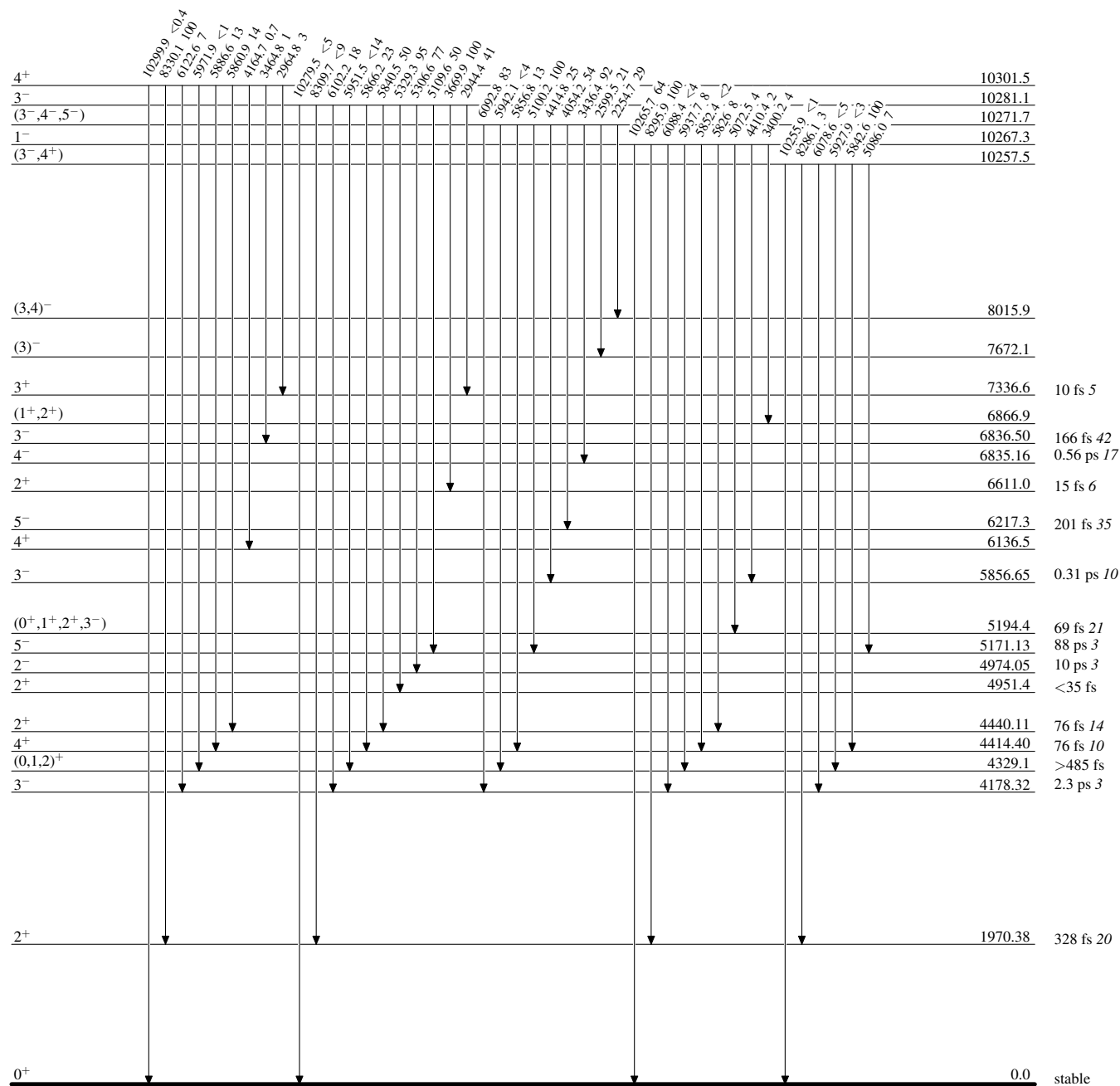
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



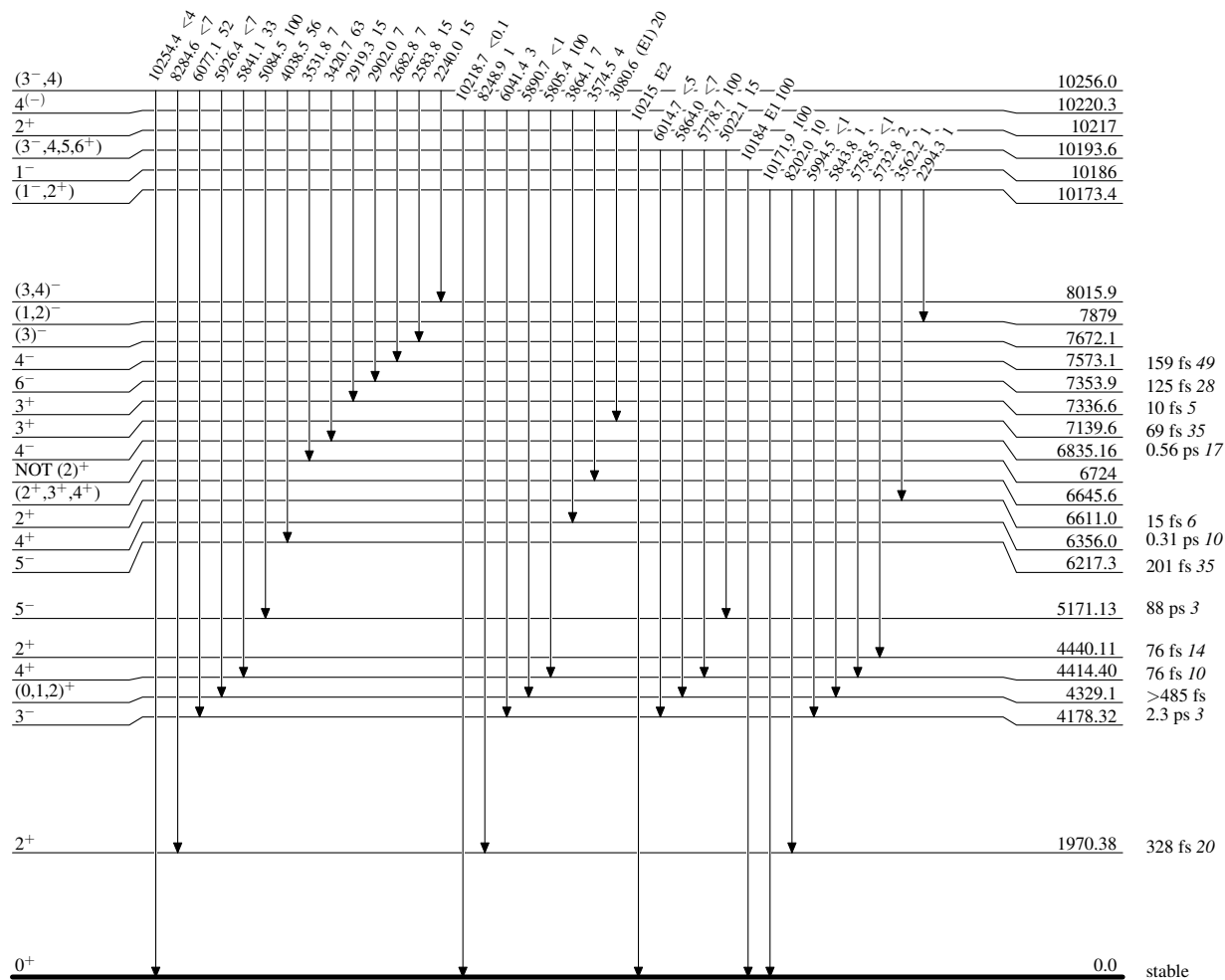
Adopted Levels, GammasLevel Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



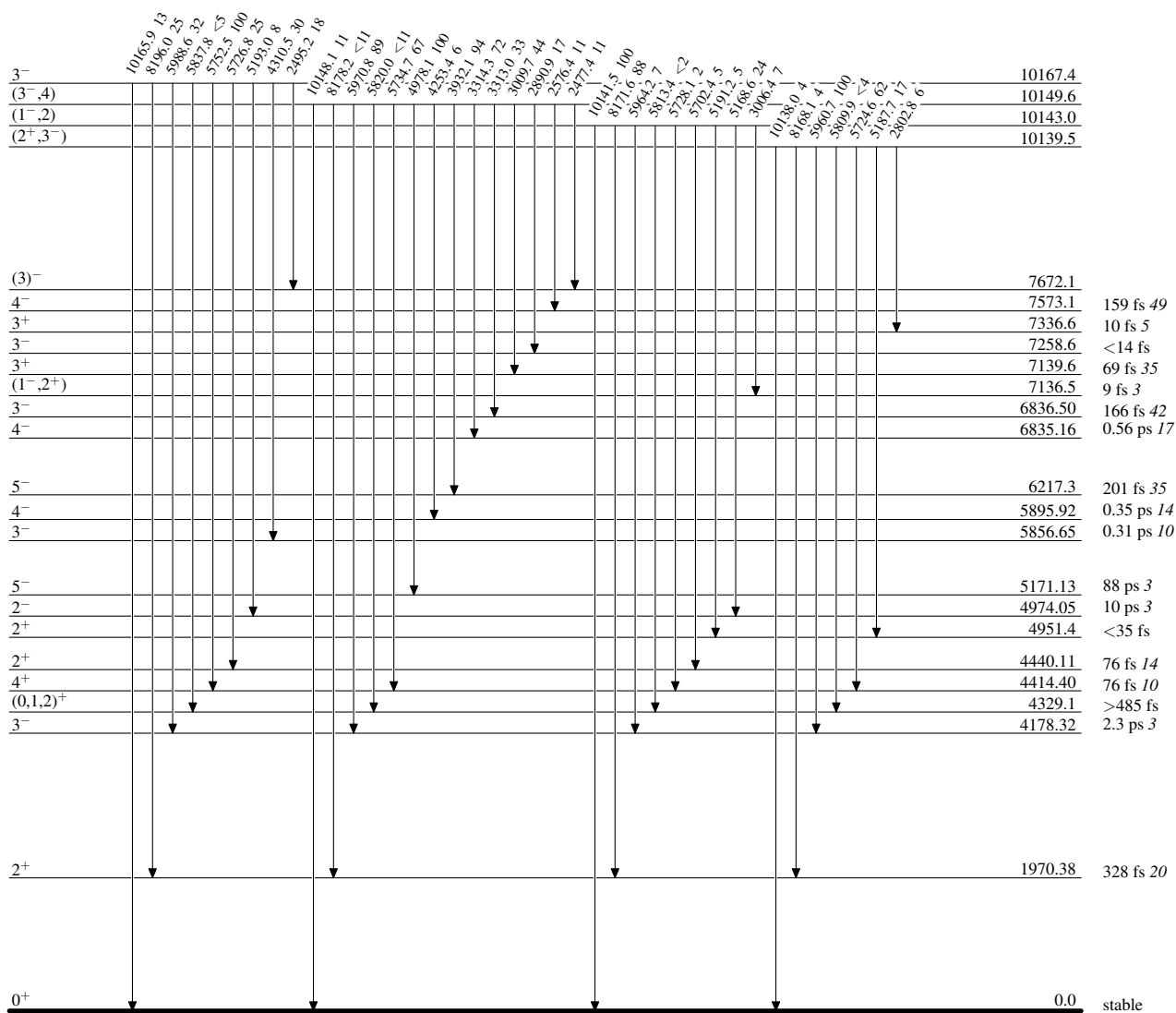
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

 $^{36}_{18}\text{Ar}_{18}$

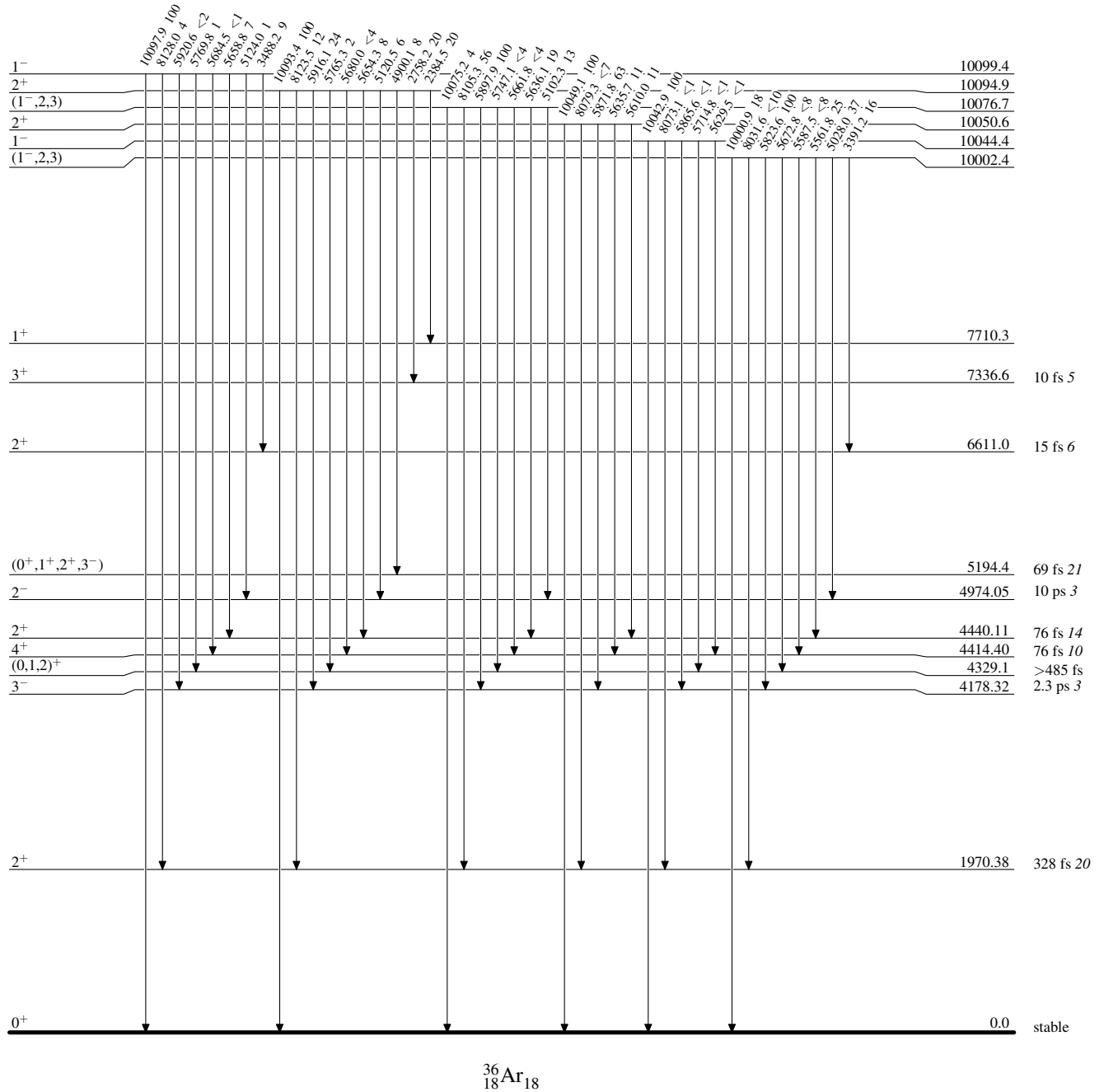
Adopted Levels, GammasLevel Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

 $^{36}_{18}\text{Ar}_{18}$

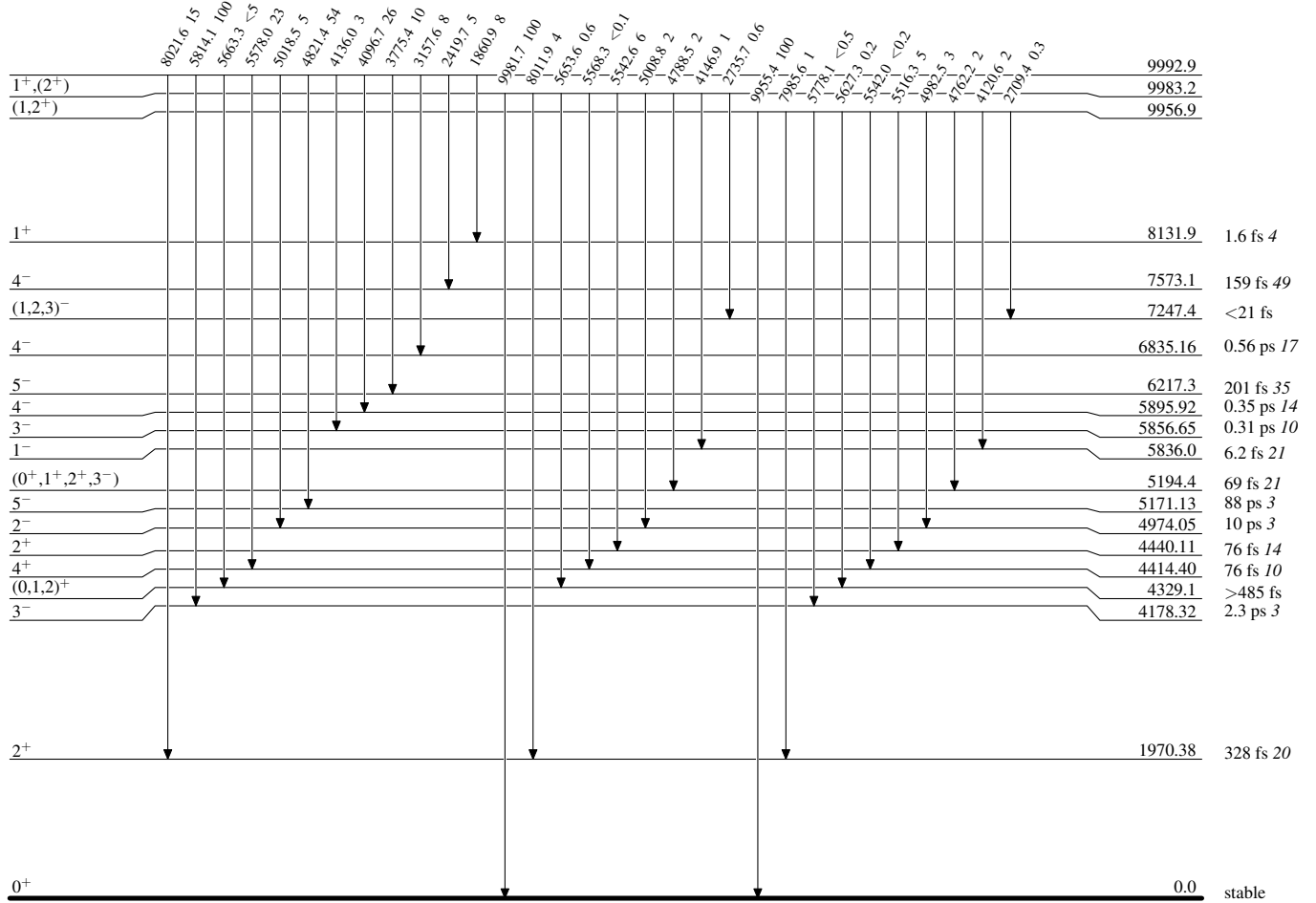
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



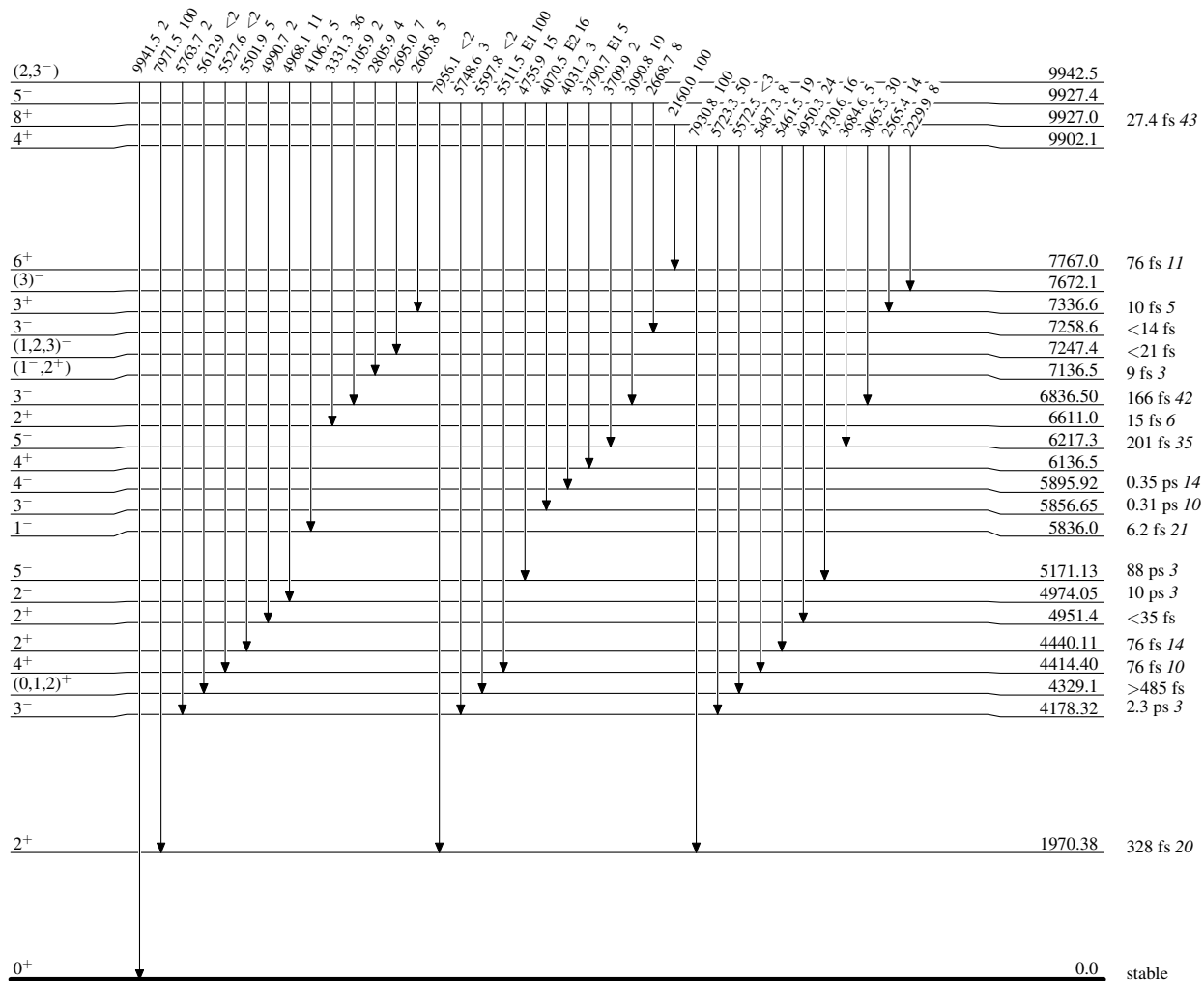
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

 $^{36}_{18}\text{Ar}_{18}$

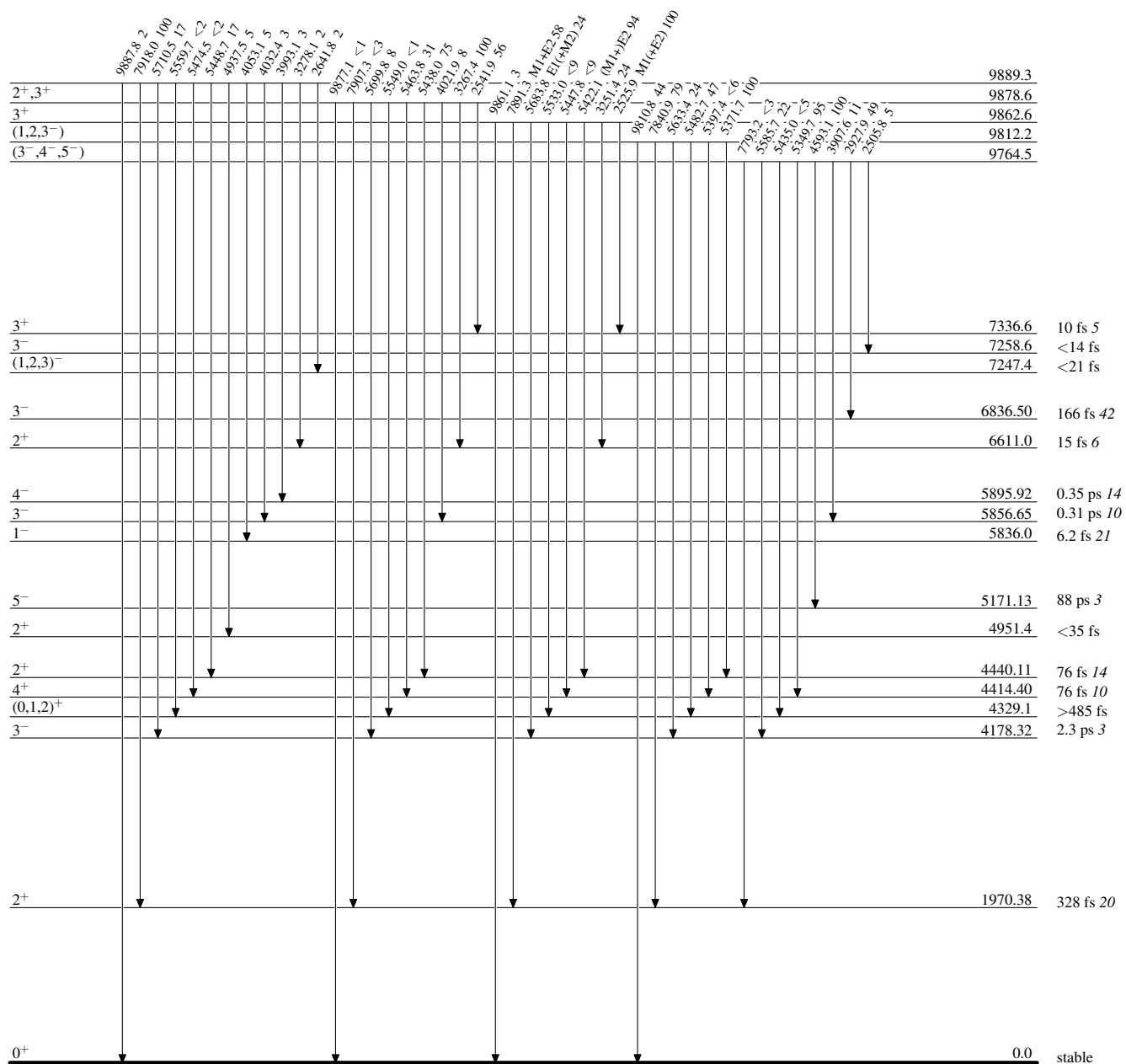
Adopted Levels, GammasLevel Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

 $^{36}_{18}\text{Ar}_{18}$

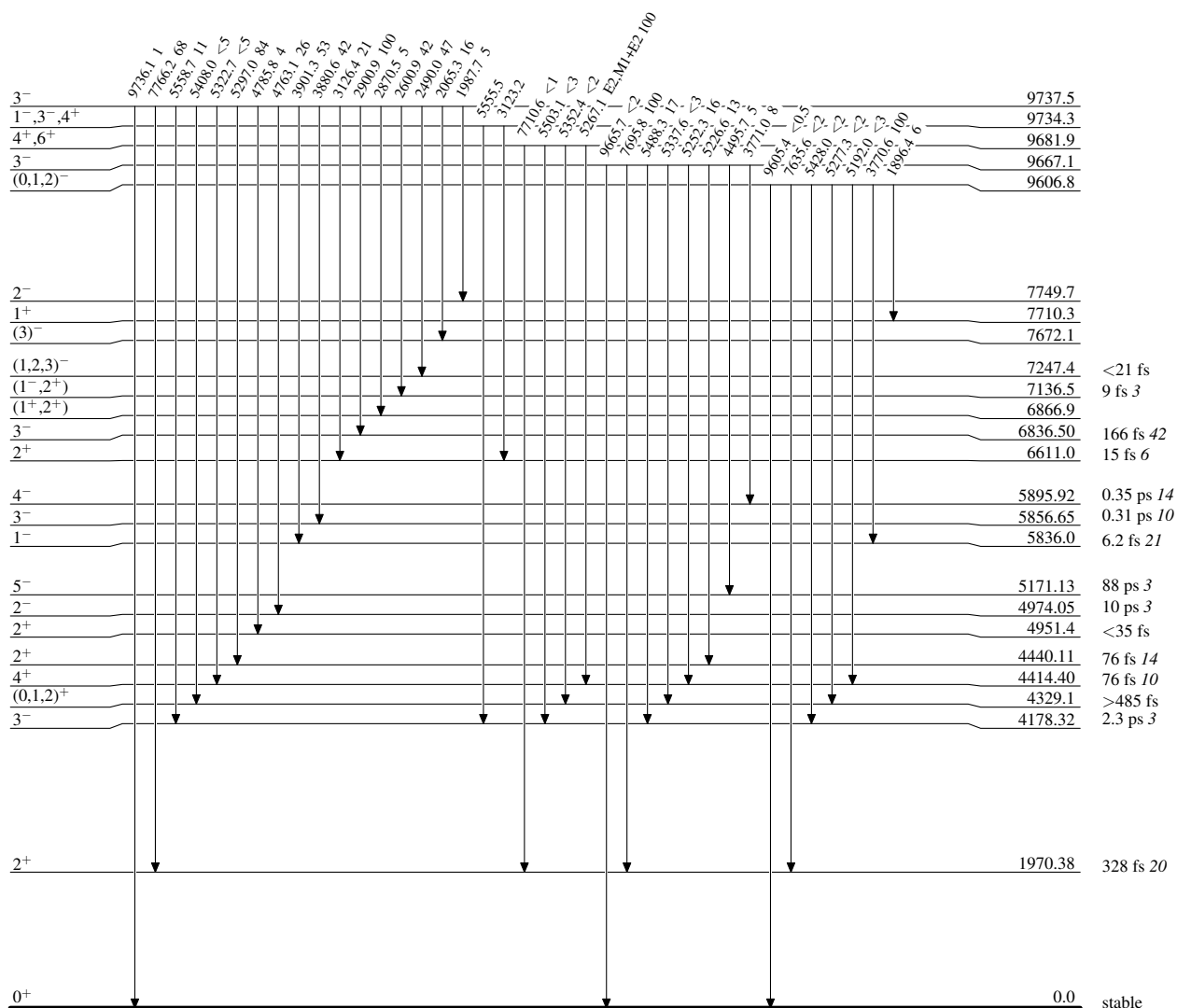
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level
& Multiplied: undivided intensity given



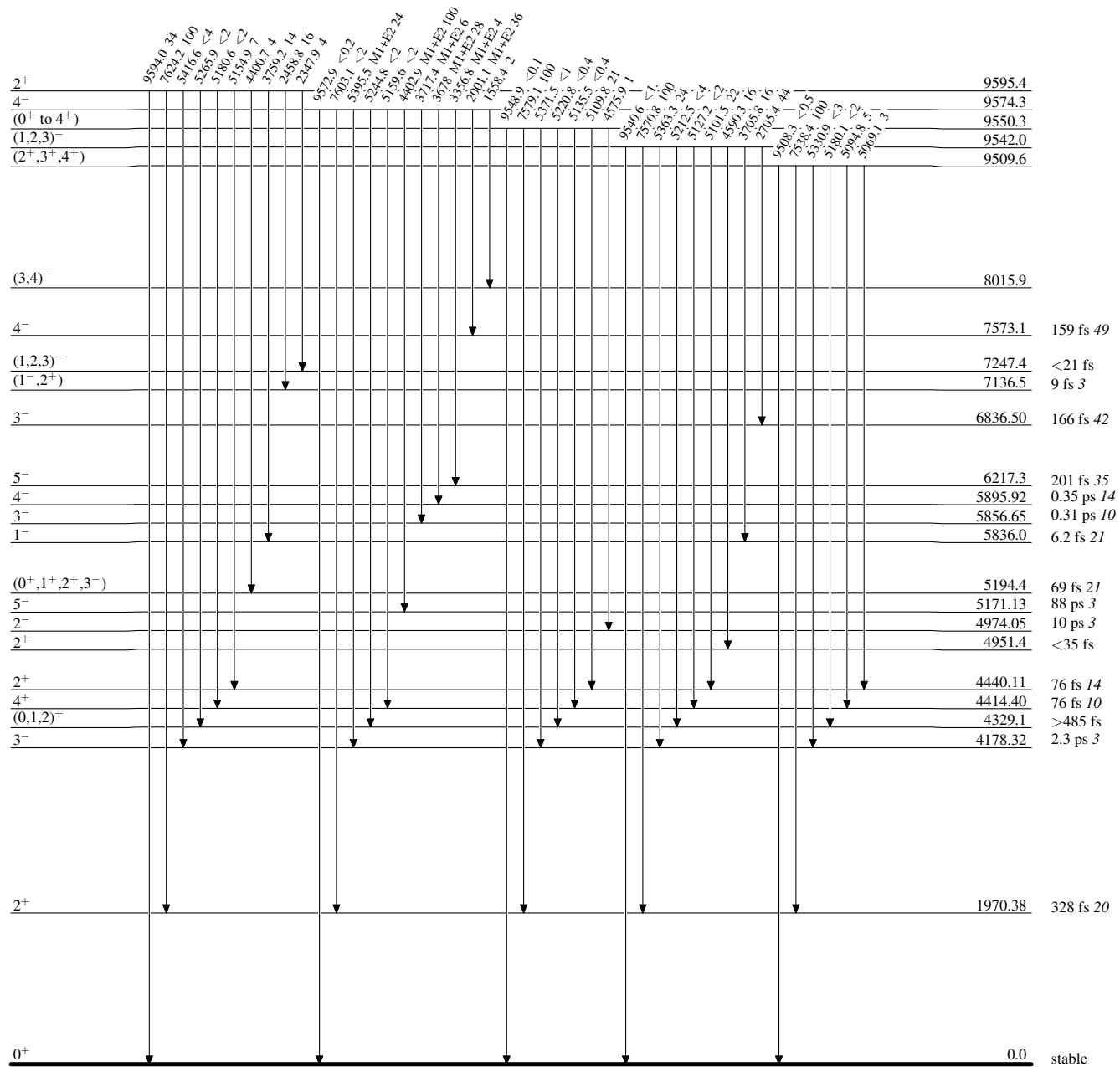
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level
& Multiplied: undivided intensity given



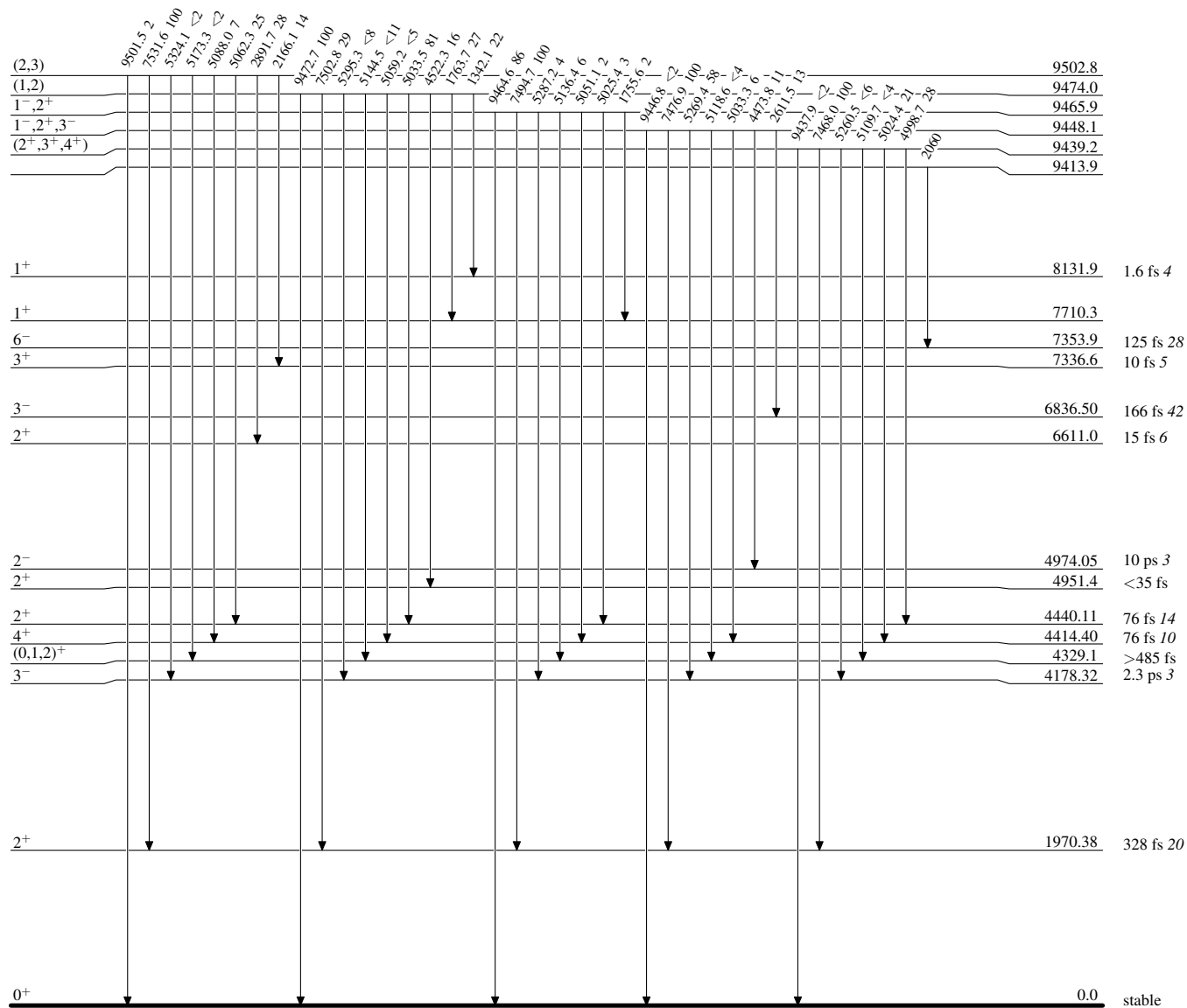
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level
& Multiplied: undivided intensity given



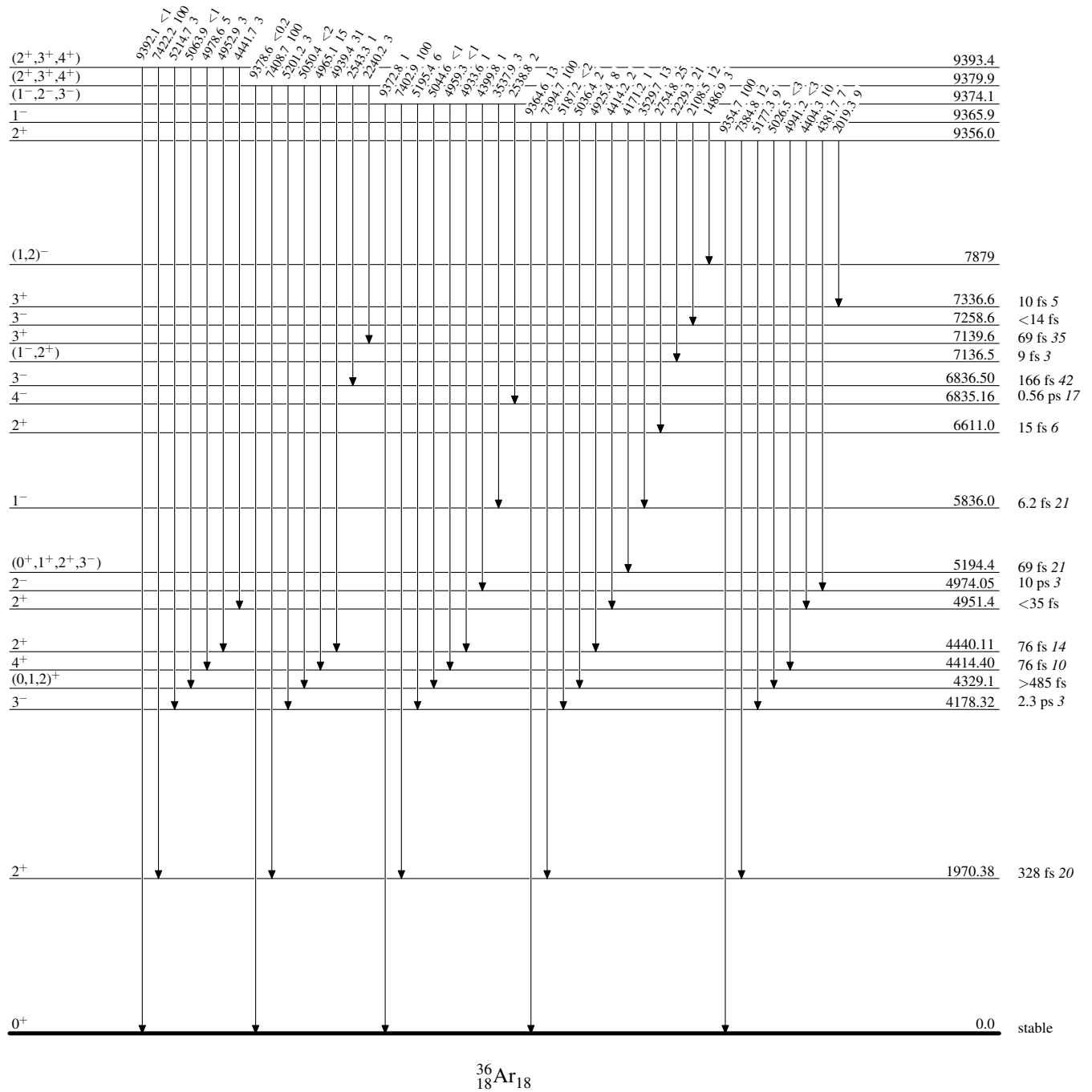
Adopted Levels, GammasLevel Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

 $^{36}_{18}\text{Ar}_{18}$

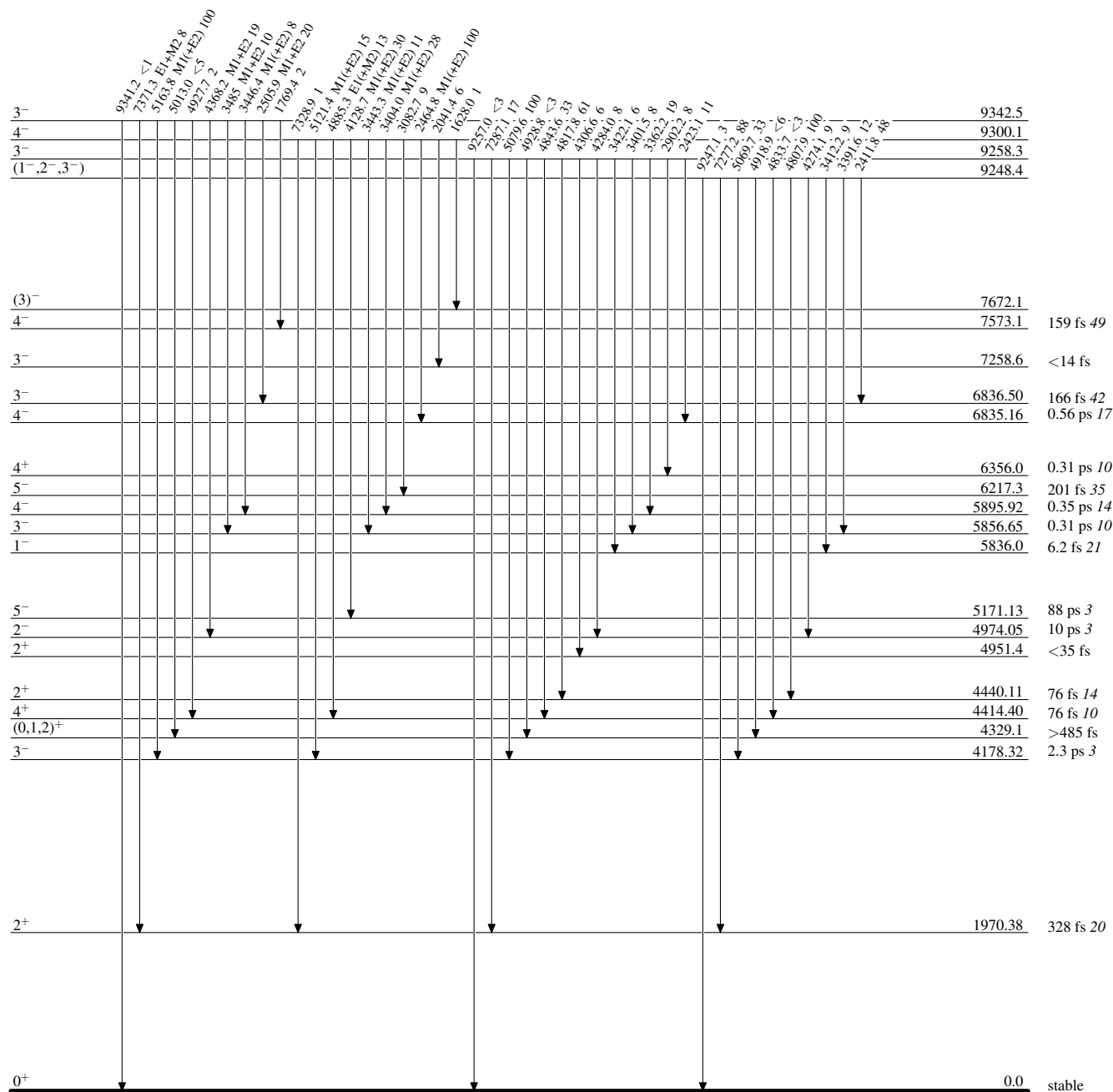
Adopted Levels, GammasLevel Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



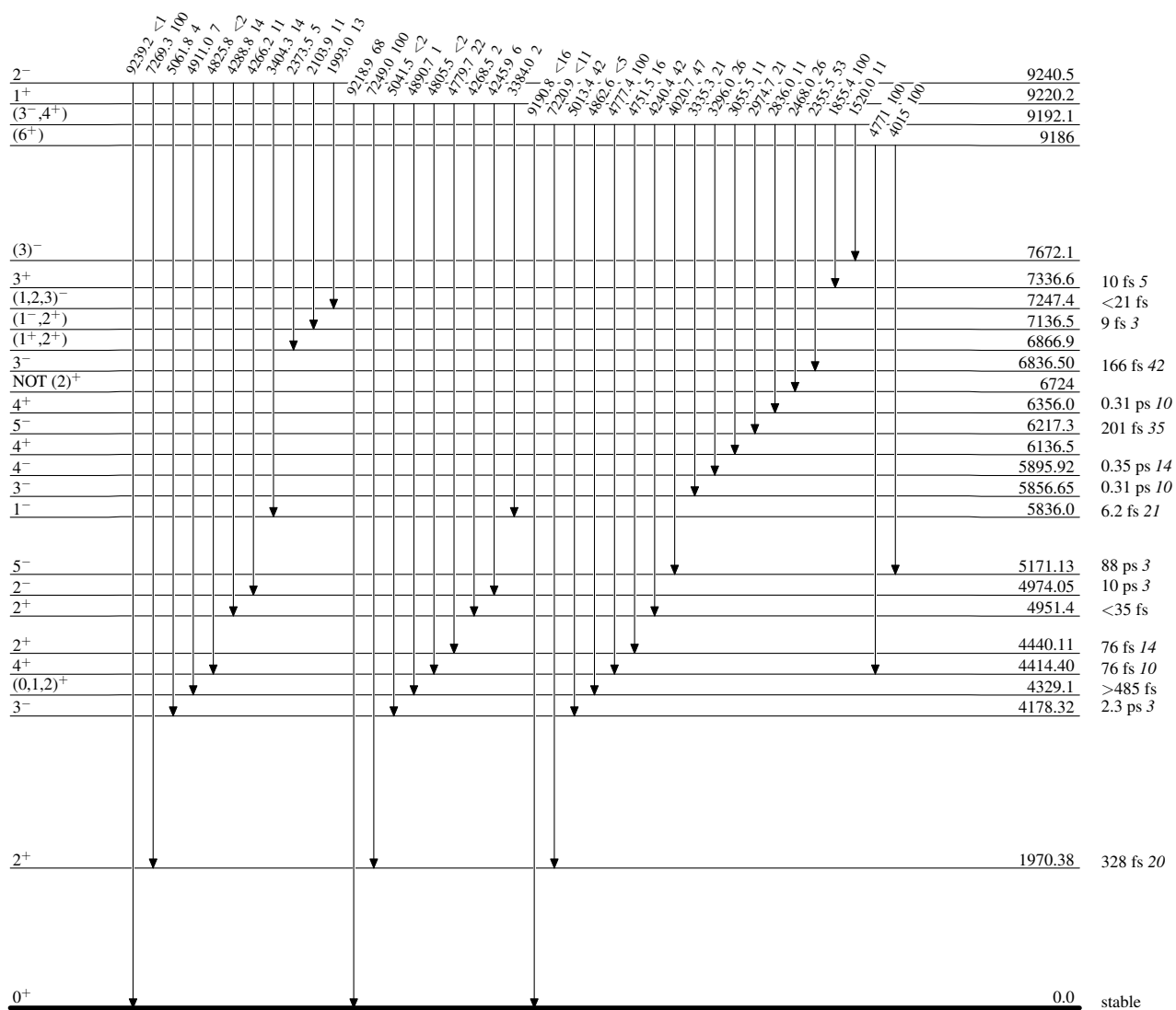
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level
& Multiplied: undivided intensity given



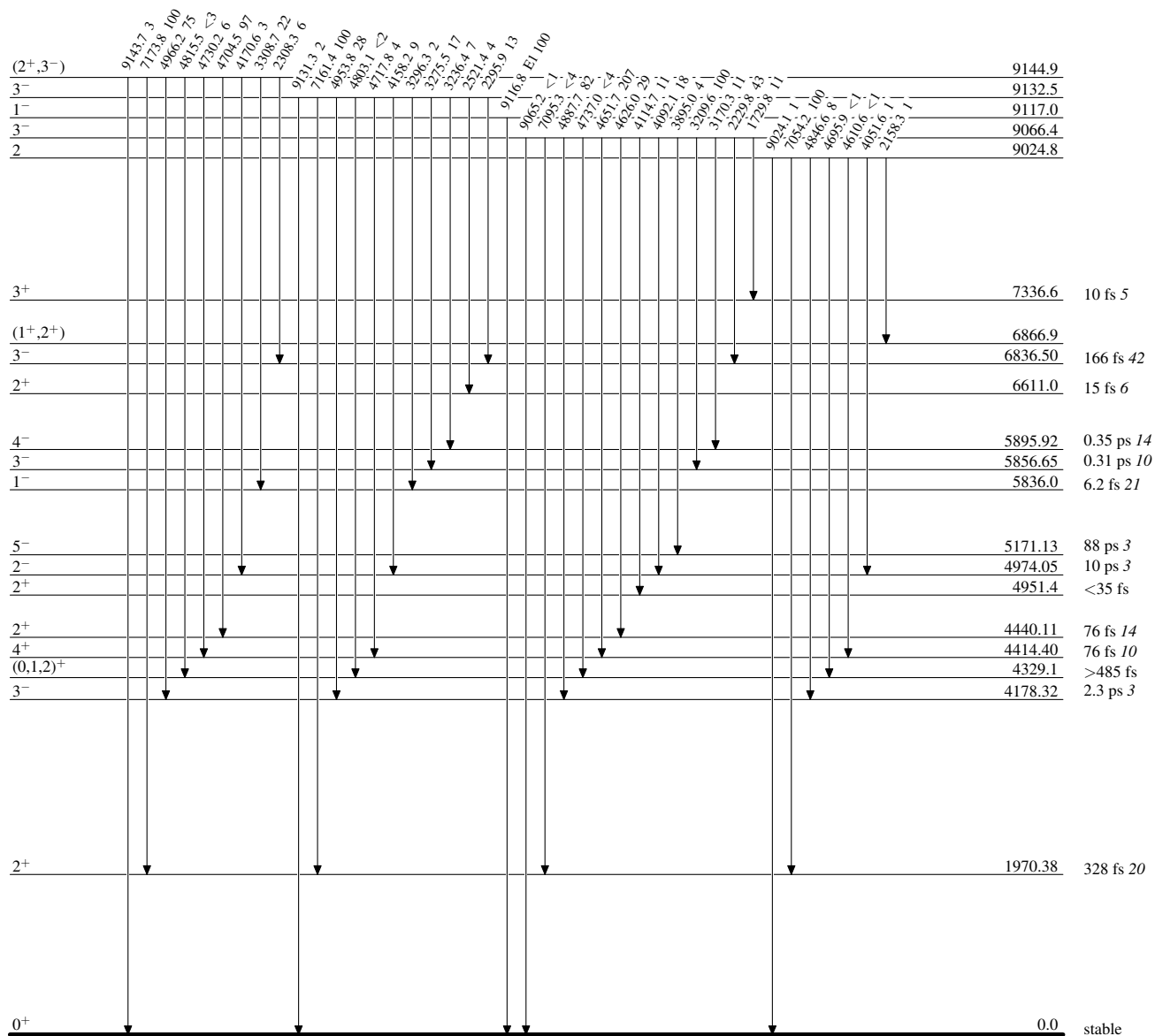
Adopted Levels, GammasLevel Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

 $^{36}_{18}\text{Ar}_{18}$

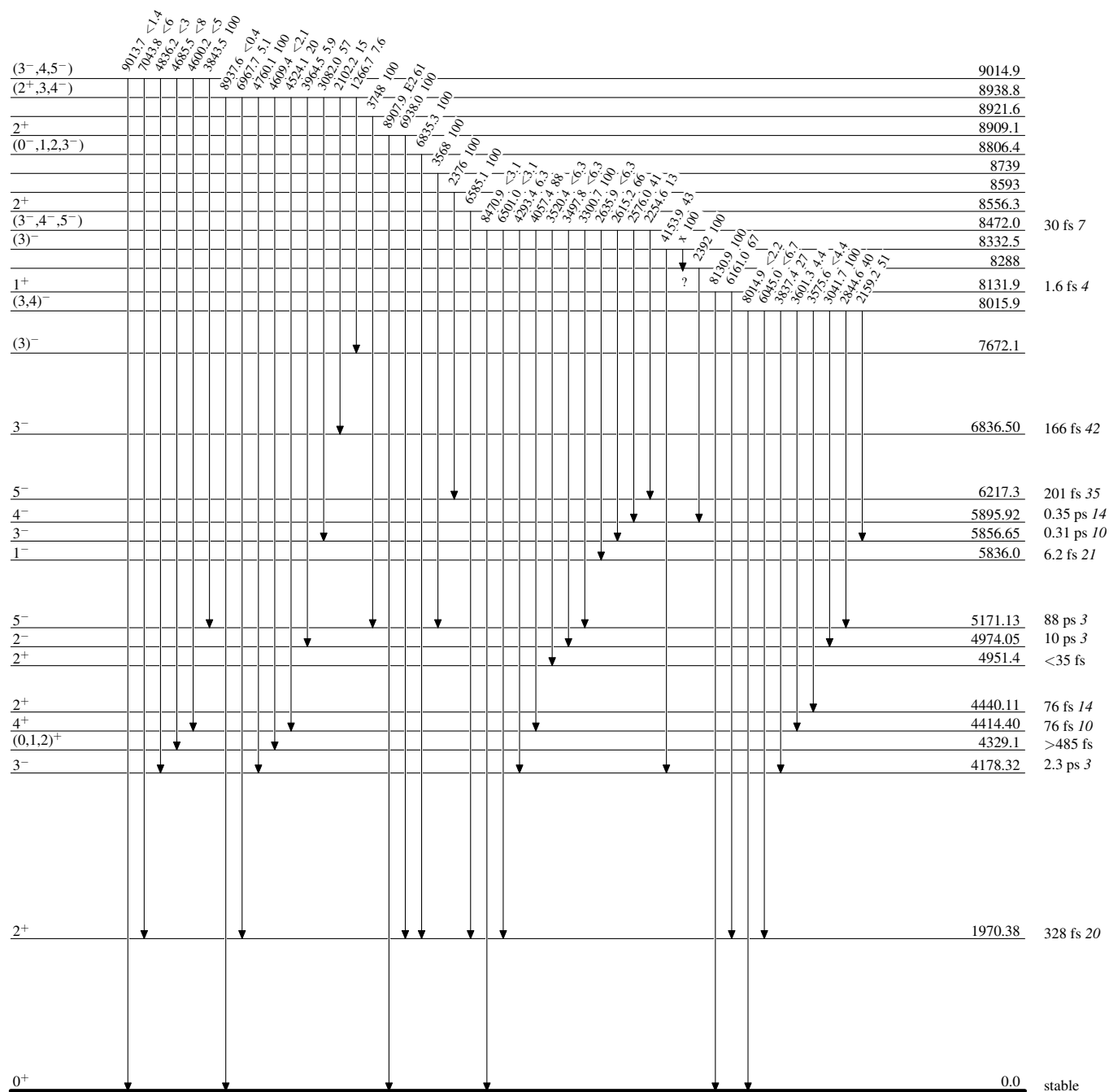
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

 $^{36}_{18}\text{Ar}_{18}$

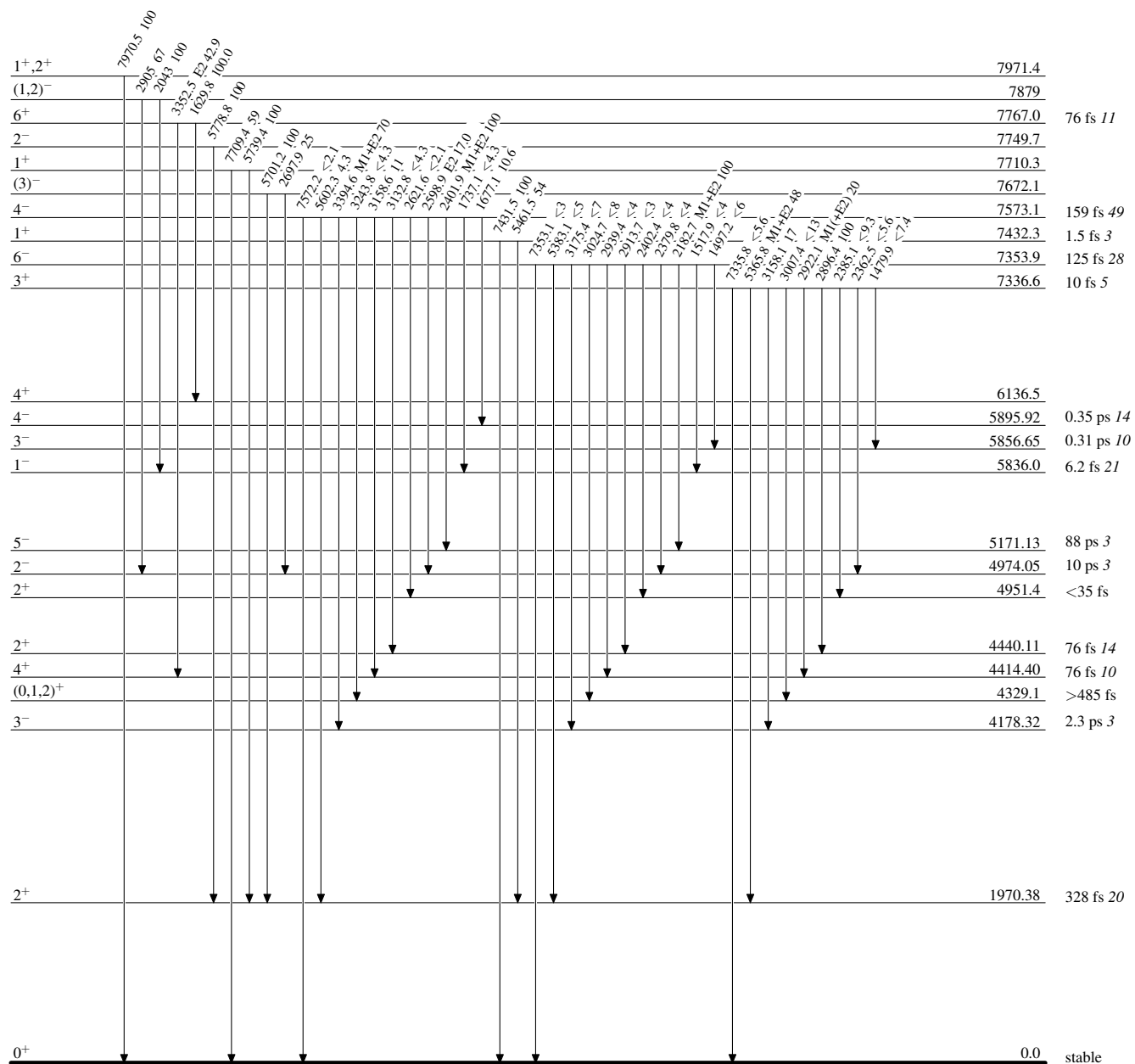
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



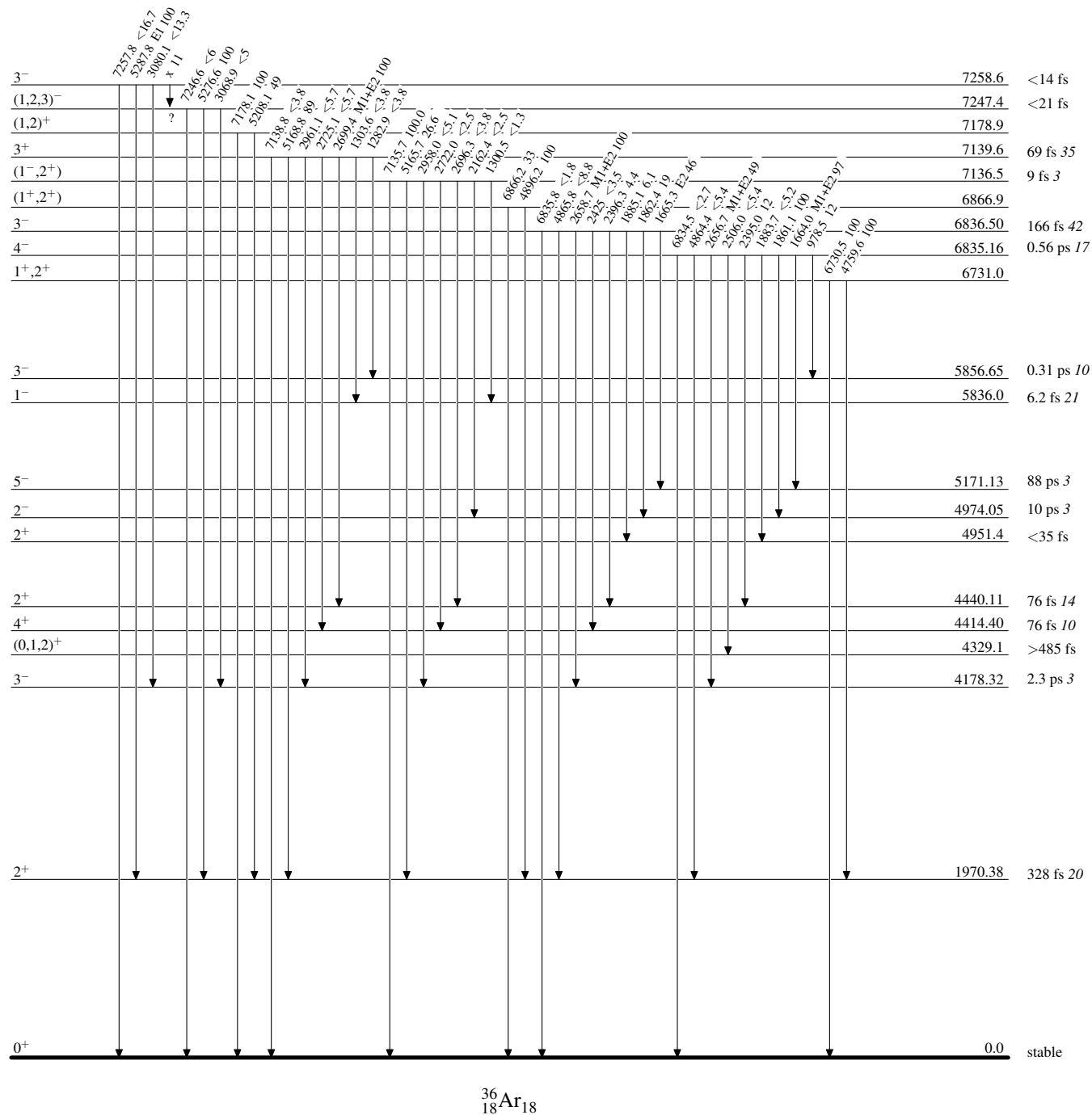
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



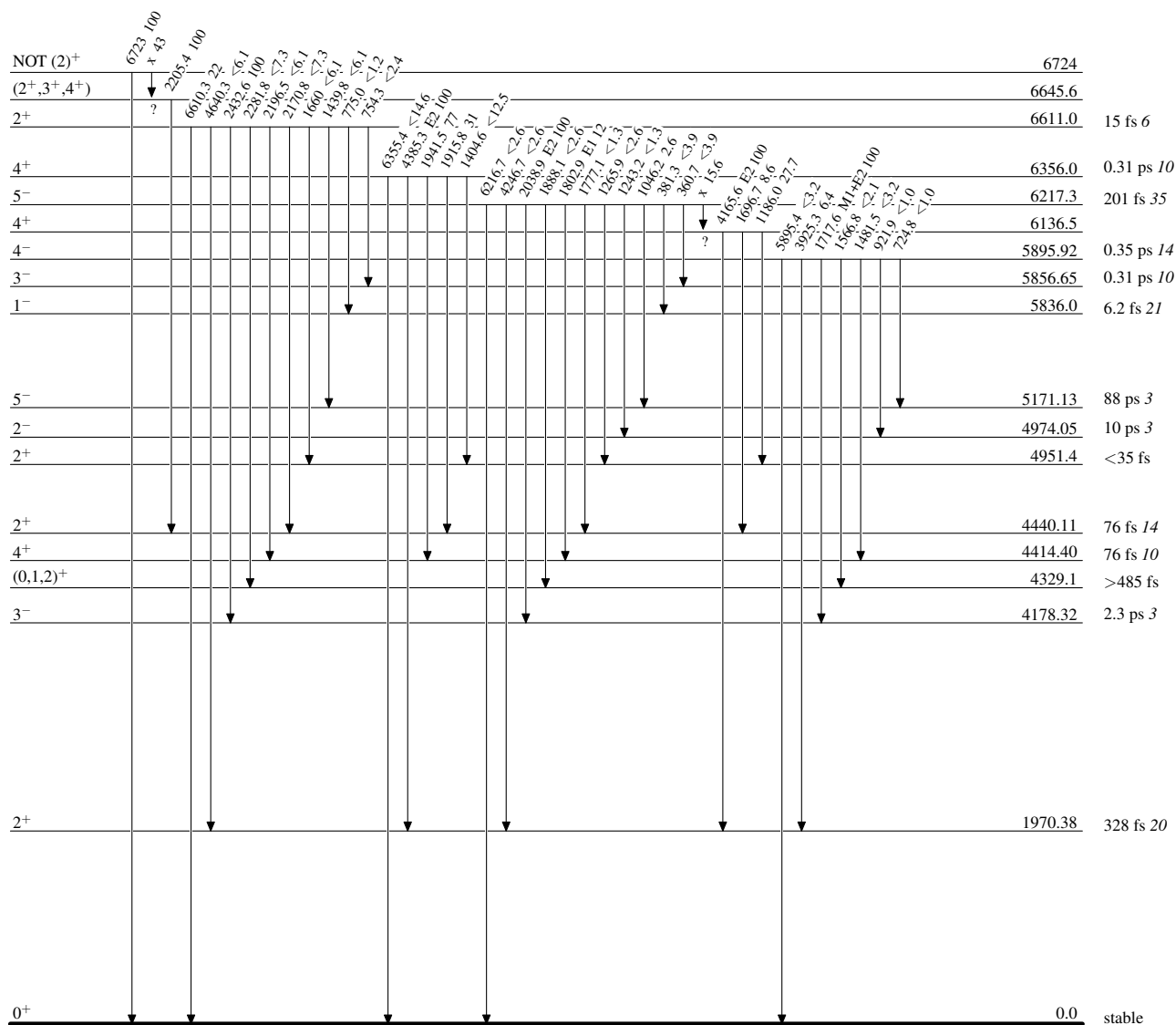
Adopted Levels, GammasLevel Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



Adopted Levels, GammasLevel Scheme (continued)

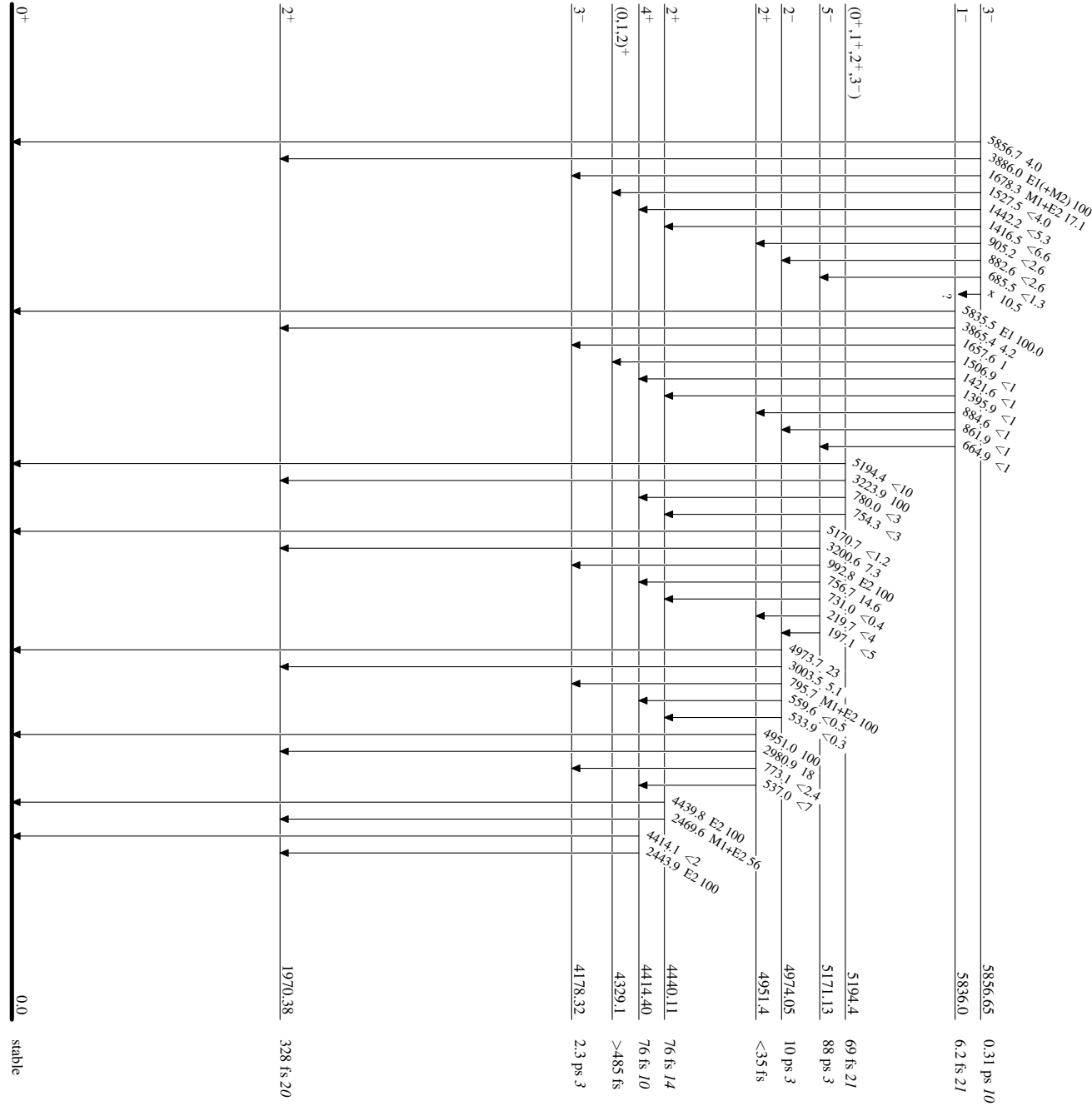
Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



Adopted Levels, Gammas

Level Scheme (continued)

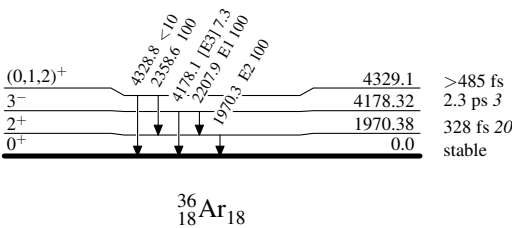
Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



Adopted Levels, Gammas

