^{182}W(α,5nγ),^{185}Re(p,5nγ) 1976Ne03

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	S. -c. Wu	NDS 106, 367 (2005)	31-Aug-2005

1976Ne03: ^{182}W(α,5nγ); E(α)=65 MeV, ^{184}W(α,7nγ); E(α)=88 MeV; enriched targets; Ge(Li) detectors; measured γ-, $\gamma\gamma$-coin., $\gamma(\theta)$, $\gamma\gamma$(t).

1974Ka19: ^{185}Re(p,5nγ), E(p)=44 MeV; enriched targets; Ge(Li) detector; measured σ(E,Eγ), γ(t); Numerous unplaced γ rays. Excitation functions and limited level scheme shown.

The level scheme, with associated spin assignments, is shown as proposed by 1976Ne03 on the basis of α,γ angular distributions and rotational band considerations. 1974Ka19 contains many unplaced γ's that are not observed in recent (HI,xnγ) experiments, and are not included in this data set.

^{181}Os Levels

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$	Comments
0.0[#]	1/2$^-$		
102.7[#] *3*	5/2$^-$		
334.3[#] *5*	9/2$^-$		
677.4[#] *6*	13/2$^-$		
1099.2[#] *6*	17/2$^-$		
1554.2[#] *7*	21/2$^-$		
1988.5[#] *9*	25/2$^-$		
2382.3[#] *10*	29/2$^-$		
2822.4[#] *10*	33/2$^-$		
x[@]	7/2$^-$		Additional information 1. E(level): x=49.0 from Adopted Levels.
107.7+x[&] *3*	9/2$^+$	316 ns *18*	T$_{1/2}$: from pγ(t) (1974Ka19).
123.56+x[@] *24*	9/2$^-$		
271.94+x[@] *24*	11/2$^-$		
442.1+x[@] *3*	13/2$^-$		
633.3+x[@] *4*	15/2$^-$		
841.8+x[@] *5*	17/2$^-$		
1067.6+x[@] *7*	19/2$^-$		
1305.9+x[@] *6*	21/2$^-$		
1557.9+x[@] *8*	23/2$^-$		
1818.4+x[@] *6*	25/2$^-$		
2089.4+x[@] *8*	27/2$^-$		
2366.0+x[@] *9*	29/2$^-$		
2649.7+x[@] *9*	31/2$^-$		
2931.3+x[@] *9*	33/2$^-$		
3216.9+x[@] *9*	35/2$^-$		
y[&]	11/2$^+$		Additional information 2. E(level): y=200.0 from Adopted Levels.
74.01+y[&] *24*	13/2$^+$		
222.89+y[&] *24*	15/2$^+$		
331.0+y[&] *4*	17/2$^+$		
588.2+y[&] *4*	19/2$^+$		
695.7+y[&] *4*	21/2$^+$		
1070.5+y[&] *4*	23/2$^+$		

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^{182}W(α,5nγ),^{185}Re(p,5nγ) 1976Ne03 (continued)

^{181}Os Levels (continued)

E(level)[†]	J$^\pi$[‡]	Comments
1159.5+y[&] *5*	25/2$^+$	
1647.7+y[&] *5*	27/2$^+$	
1707.1+y[&] *6*	29/2$^+$	
2291.4+y[&] *6*	31/2$^+$	
2307.0+y[&] *7*	33/2$^+$	
2906.9+y[&] *7*	37/2$^+$	
2962.5+y[&] *7*	35/2$^+$	
3493.5+y[&] *8*	41/2$^+$	
w		Additional information 3. E(level): w=1761 from Adopted Levels.
130.8+w *3*	(21/2,23/2)	
334.8+w *5*	(23/2,25/2)	
549.5+w *6*	(25/2,27/2)	
779.1+w *8*	(27/2,29/2)	

[†] From least-squares fit to the Eγ's by the evaluator.
[‡] From $\gamma\gamma$-coin. and rotational band structures.
[#] 1/2$^-$[521] band.
[@] 7/2$^-$[514] band.
[&] 9/2$^+$[624] band.

γ(^{181}Os)

E$_\gamma$[†]	I$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[‡]	α[a]	Comments
z		y	11/2$^+$					E$_\gamma$: z=43.14 *9*, y=200.0 from adopted gammas.
74.0 *3*	0.05 *2*	74.01+y	13/2$^+$	y	11/2$^+$	D		
102.7 *3*	0.04 *1*	102.7	5/2$^-$	0.0	1/2$^-$	E2[&]	3.97	α(K)=0.782 *24*; α(L)=2.40 *8*; α(M)=0.610 *19*; α(N+..)=0.184 *6*
107.7 *3*	0.77[#] *8*	107.7+x	9/2$^+$	x	7/2$^-$	E1[@]	0.327	α(K)=0.266 *8*; α(L)=0.0472 *15*; α(M)=0.0108 *4*; α(N+..)=0.00323 *10* E$_\gamma$: x=49.0 from Adopted Levels.
107.7 *6*	0.04[#] *2*	331.0+y	17/2$^+$	222.89+y	15/2$^+$	M1[@]	4.70	α(K)=3.88 *12*; α(L)=0.631 *19*; α(M)=0.144 *5*; α(N+..)=0.0451 *14*
107.7 *6*	0.02[#] *2*	695.7+y	21/2$^+$	588.2+y	19/2$^+$	M1[@]	4.70	α(K)=3.88 *12*; α(L)=0.631 *19*; α(M)=0.144 *5*; α(N+..)=0.0451 *14*
123.5 *3*	0.10 *1*	123.56+x	9/2$^-$	x	7/2$^-$	D		
130.8 *3*	0.05 *2*	130.8+w	(21/2,23/2)	w		(D)		E$_\gamma$: w=1761 from Adopted Levels.
148.4 *3*	0.06 *2*	271.94+x	11/2$^-$	123.56+x	9/2$^-$	D		
148.8 *3*	0.11 *2*	222.89+y	15/2$^+$	74.01+y	13/2$^+$	D		
170.3 *3*	0.02 *1*	442.1+x	13/2$^-$	271.94+x	11/2$^-$	D		
191.2 *3*	0.03 *1*	633.3+x	15/2$^-$	442.1+x	13/2$^-$	D		
204.0 *3*	0.05 *2*	334.8+w	(23/2,25/2)	130.8+w	(21/2,23/2)	D		
214.7 *3*	0.03 *2*	549.5+w	(25/2,27/2)	334.8+w	(23/2,25/2)	D		
222.9 *3*	0.17 *3*	222.89+y	15/2$^+$	y	11/2$^+$	E2[&]	0.234	α(K)=0.129 *4*; α(L)=0.0795 *24*; α(M)=0.0198 *6*; α(N+..)=0.00592 *18*
229.6 *6*	0.03 *2*	779.1+w	(27/2,29/2)	549.5+w	(25/2,27/2)	D		
231.6 *3*	0.15 *2*	334.3	9/2$^-$	102.7	5/2$^-$	E2[&]	0.207	α(K)=0.117 *4*; α(L)=0.0680 *21*; α(M)=0.0170 *5*; α(N+..)=0.00506 *16*

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^{182}W(α,5nγ),^{185}Re(p,5nγ) 1976Ne03 (continued)

γ(^{181}Os) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[a]	Comments
257.1 *3*	0.23 *5*	331.0+y	17/2$^+$	74.01+y	13/2$^+$	E2[&]	0.148	α(K)=0.089 *3*; α(L)=0.0449 *14*; α(M)=0.0111 *4*; α(N+..)=0.00332 *10*
257.1 *6*	0.09 *2*	588.2+y	19/2$^+$	331.0+y	17/2$^+$	D		
272.0 *3*	0.12 *1*	271.94+x	11/2$^-$	x	7/2$^-$	E2[&]	0.124	α(K)=0.0766 *23*; α(L)=0.0360 *11*; α(M)=0.0089 *3*; α(N+..)=0.00266 *8*
318.5 *3*	0.20 *2*	442.1+x	13/2$^-$	123.56+x	9/2$^-$	E2[&]	0.0773	α(K)=0.0511 *16*; α(L)=0.0199 *6*; α(M)=0.00489 *15*; α(N+..)=0.00146 *5*
343.1 *3*	0.20 *2*	677.4	13/2$^-$	334.3	9/2$^-$	E2[&]	0.0624	α(K)=0.0424 *13*; α(L)=0.0152 *5*; α(M)=0.00372 *12*; α(N+..)=0.00111 *4*
361.3 *3*	0.26 *3*	633.3+x	15/2$^-$	271.94+x	11/2$^-$	E2[&]	0.0539	α(K)=0.0373 *12*; α(L)=0.0127 *4*; α(M)=0.00309 *10*; α(N+..)=0.00093 *3*
364.6 *3*	0.31 *5*	695.7+y	21/2$^+$	331.0+y	17/2$^+$	E2[&]	0.0526	α(K)=0.0364 *11*; α(L)=0.0123 *4*; α(M)=0.00299 *9*; α(N+..)=0.00090 *3*
365.3 *3*	0.24 *6*	588.2+y	19/2$^+$	222.89+y	15/2$^+$	E2[&]	0.0523	α(K)=0.0363 *11*; α(L)=0.0122 *4*; α(M)=0.00297 *9*; α(N+..)=0.00089 *3*
374.8 *3*	0.04 *1*	1070.5+y	23/2$^+$	695.7+y	21/2$^+$	D		
393.8 *3*	0.07 *2*	2382.3	29/2$^-$	1988.5	25/2$^-$	E2[&]	0.0425	α(K)=0.0302 *9*; α(L)=0.0094 *3*; α(M)=0.00229 *7*; α(N+..)=0.00069 *2*
399.7 *3*	0.22 *2*	841.8+x	17/2$^-$	442.1+x	13/2$^-$	E2[&]	0.0409	α(K)=0.0291 *9*; α(L)=0.0090 *3*; α(M)=0.00217 *7*; α(N+..)=0.00065 *2*
421.8 *3*	0.14 *1*	1099.2	17/2$^-$	677.4	13/2$^-$	E2[&]	0.0354	α(K)=0.0255 *8*; α(L)=0.00749 *23*; α(M)=0.00181 *6*; α(N+..)=0.00054 *2*
434.3 *6*	0.18 *2*	1067.6+x	19/2$^-$	633.3+x	15/2$^-$	E2[&]	0.0328	α(K)=0.0238 *8*; α(L)=0.00681 *21*; α(M)=0.00164 *5*; α(N+..)=0.00049 *2*
434.3 *6*	0.11 *2*	1988.5	25/2$^-$	1554.2	21/2$^-$	E2[&]	0.0328	α(K)=0.0238 *8*; α(L)=0.00681 *21*; α(M)=0.00164 *5*; α(N+..)=0.00049 *2*
440.1 *3*	0.04 *1*	2822.4	33/2$^-$	2382.3	29/2$^-$	E2[&]	0.0317	α(K)=0.0231 *7*; α(L)=0.00652 *20*; α(M)=0.00157 *5*; α(N+..)=0.00047 *2*
455.0 *3*	0.12 *1*	1554.2	21/2$^-$	1099.2	17/2$^-$	E2[&]	0.0290	α(K)=0.0213 *7*; α(L)=0.00586 *18*; α(M)=0.00141 *5*; α(N+..)=0.00042 *1*
463.8 *3*	0.21 *4*	1159.5+y	25/2$^+$	695.7+y	21/2$^+$	E2[&]	0.0276	α(K)=0.0204 *7*; α(L)=0.00552 *17*; α(M)=0.00133 *4*; α(N+..)=0.00040 *1*
464.1 *3*	0.18 *4*	1305.9+x	21/2$^-$	841.8+x	17/2$^-$	E2[&]	0.0276	α(K)=0.0204 *7*; α(L)=0.00551 *17*; α(M)=0.00132 *4*; α(N+..)=0.00040 *1*
482.3 *3*	0.14 *4*	1070.5+y	23/2$^+$	588.2+y	19/2$^+$	E2[&]	0.0250	α(K)=0.0186 *6*; α(L)=0.00488 *15*; α(M)=0.00117 *4*; α(N+..)=0.00035 *1*
490.3 *3*	0.16 *2*	1557.9+x	23/2$^-$	1067.6+x	19/2$^-$	E2[&]	0.0240	α(K)=0.0179 *6*; α(L)=0.00464 *14*; α(M)=0.00111 *4*; α(N+..)=0.00034 *1*
512.5 *3*	0.23 *5*	1818.4+x	25/2$^-$	1305.9+x	21/2$^-$	E2[&]	0.0216	α(K)=0.0162 *5*; α(L)=0.00406 *13*
531.5 *3*	0.07 *2*	2089.4+x	27/2$^-$	1557.9+x	23/2$^-$	E2[&]	0.0198	α(K)=0.0149 *5*; α(L)=0.00364 *11*
547.6 *6*	0.08 *2*	2366.0+x	29/2$^-$	1818.4+x	25/2$^-$	E2[&]	0.0184	α(K)=0.0140 *5*; α(L)=0.00333 *10*
547.6 *3*	0.17 *2*	1707.1+y	29/2$^+$	1159.5+y	25/2$^+$	E2[&]	0.0184	α(K)=0.0140 *5*; α(L)=0.00333 *10*
560.3 *3*	0.04 *1*	2649.7+x	31/2$^-$	2089.4+x	27/2$^-$	E2[&]	0.0174	α(K)=0.0133 *4*; α(L)=0.00312 *10*
565.3 *3*	0.05 *2*	2931.3+x	33/2$^-$	2366.0+x	29/2$^-$	E2[&]	0.0171	α(K)=0.0130 *4*; α(L)=0.00304 *10*
567.2 *3*	0.02 *1*	3216.9+x	35/2$^-$	2649.7+x	31/2$^-$	E2[&]	0.0169	α(K)=0.0129 *4*; α(L)=0.00301 *9*
577.2 *3*	0.09 *1*	1647.7+y	27/2$^+$	1070.5+y	23/2$^+$	E2[&]	0.0163	α(K)=0.0125 *4*; α(L)=0.00286 *9*
586.6 *3*	0.04 *1*	3493.5+y	41/2$^+$	2906.9+y	37/2$^+$	E2[&]	0.0157	α(K)=0.0120 *4*; α(L)=0.00273 *9*
599.9 *3*	0.09 *2*	2307.0+y	33/2$^+$	1707.1+y	29/2$^+$	E2[&]	0.0149	α(K)=0.0115 *4*; α(L)=0.00257 *8*
599.9 *3*	0.06 *2*	2906.9+y	37/2$^+$	2307.0+y	33/2$^+$	E2[&]	0.0149	α(K)=0.0115 *4*; α(L)=0.00257 *8*

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^{182}W(α,5nγ),^{185}Re(p,5nγ) 1976Ne03 (continued)

γ(^{181}Os) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[a]	Comments
643.7 *3*	0.06 *2*	2291.4+y	31/2$^+$	1647.7+y	27/2$^+$	E2[&]	0.0127	α(K)=0.0099 *3*; α(L)=0.00211 *7*
671.1 *3*	0.03 *1*	2962.5+y	35/2$^+$	2291.4+y	31/2$^+$	E2[&]	0.0116	α(K)=0.0090 *3*; α(L)=0.00189 *6*

† From 1976Ne03.
‡ From angular distribution measurements (1976Ne03).
# The intensity of the large component of the 107.7-keV γ was reported by 1974Ne03. The summed intensity for the remaining two components is 0.06±0.02 and was divided by the evaluator using intensity balances into and out of the associated levels.
@ From intensity balance.
& Stretched quadrupole transition connecting ΔJ=2 states in the rotational band.
a Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

^{182}W(α,5nγ),^{185}Re(p,5nγ) 1976Ne03

Level Scheme

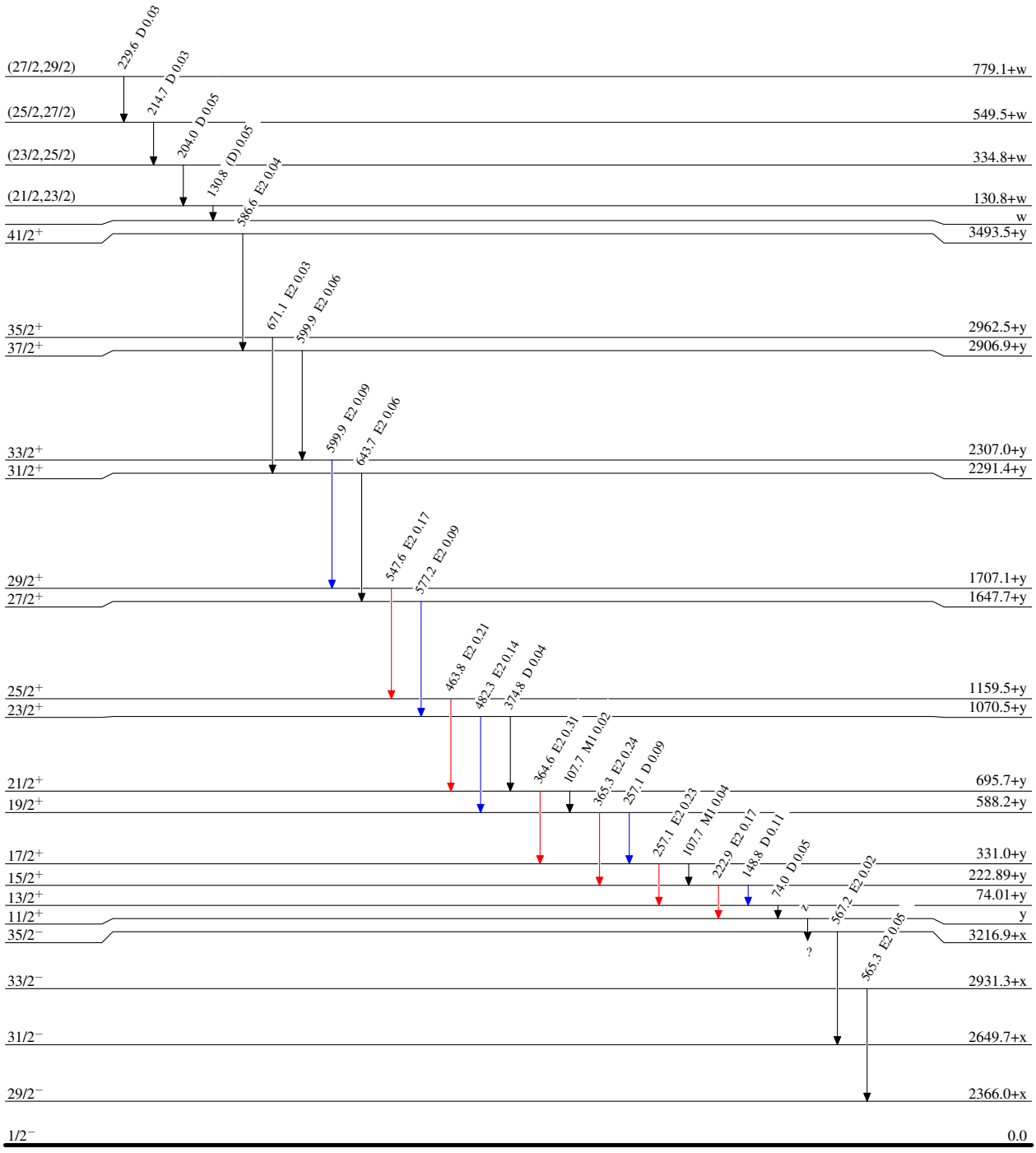
Intensities: Type not specified

Legend

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

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

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

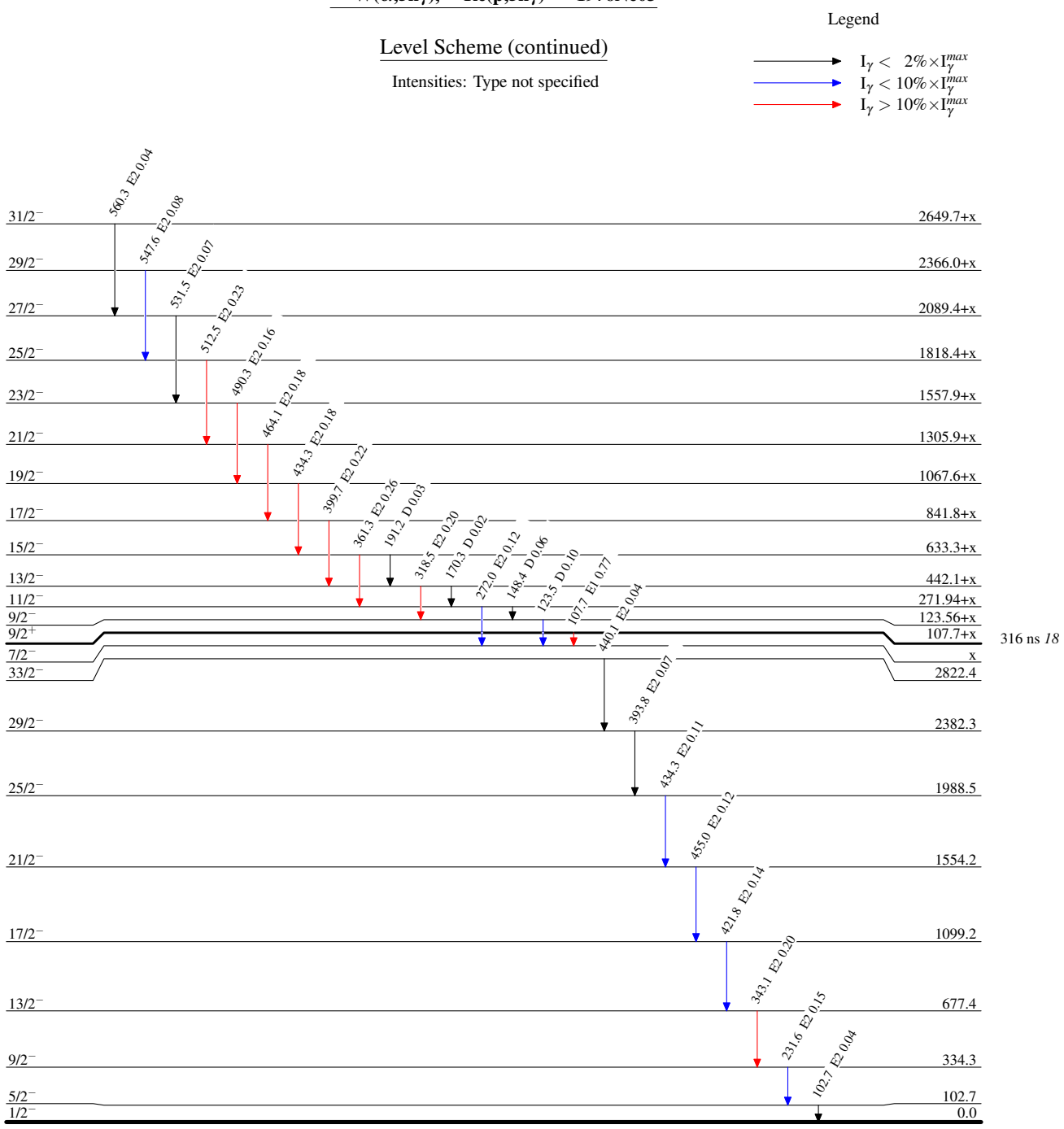


$^{181}_{76}Os_{105}$

^{182}W(α,5nγ),^{185}Re(p,5nγ) 1976Ne03

Level Scheme (continued)

Intensities: Type not specified



$^{181}_{76}Os_{105}$