

TABLE 3.8
Transition probabilities of p^2 ions

Transition	[N II]			[O III]			[Ne V]			[S III]			[Ar V]		
	Transition probability (sec ⁻¹)	Wave-length (Å)	Transition probability (sec ⁻¹)	Wave-length (Å)	Transition probability (sec ⁻¹)	Wave-length (Å)	Transition probability (sec ⁻¹)	Wave-length (Å)	Transition probability (sec ⁻¹)	Wave-length (Å)	Transition probability (sec ⁻¹)	Wave-length (Å)	Transition probability (sec ⁻¹)	Wave-length (Å)	Transition probability (sec ⁻¹)
$^1D_2 - ^1S_0$	1.1	5754.6	1.8	4363.2	2.8	2974.8	2.2	6312.1	3.3	4625.5					
$^3P_2 - ^1S_0$	1.5×10^{-4}	3070.8	7.8×10^{-4}	2331.4	6.7×10^{-3}	1592.7	1.0×10^{-2}	3797.2	5.7×10^{-2}	2786.0					
$^3P_1 - ^1S_0$	3.4×10^{-2}	3062.8	2.2×10^{-1}	2321.0	4.2	1575.2	8.0×10^{-1}	3721.7	6.6	2691.1					
$^3P_2 - ^1D_2$	3.0×10^{-3}	6583.4	2.0×10^{-2}	5006.9	3.6×10^{-1}	3425.9	5.8×10^{-2}	9530.9	4.8×10^{-1}	7005.7					
$^3P_1 - ^1D_2$	1.0×10^{-3}	6548.1	6.7×10^{-3}	4958.9	1.3×10^{-1}	3345.8	2.2×10^{-2}	9068.9	2.0×10^{-1}	6435.1					
$^3P_0 - ^1D_2$	5.4×10^{-7}	6527.1	2.7×10^{-6}	4931.0	2.4×10^{-5}	3300.1	5.8×10^{-6}	8829.5	3.5×10^{-5}	6133.1					
$^3P_1 - ^3P_2$	7.5×10^{-6}	122 μ	9.8×10^{-5}	51.8 μ	4.6×10^{-3}	14.3 μ	2.1×10^{-3}	18.7 μ	2.7×10^{-2}	7.9 μ					
$^3P_0 - ^3P_2$	1.2×10^{-12}	76 μ	3.0×10^{-11}	32.7 μ	5.1×10^{-9}	9.0 μ	4.6×10^{-8}	12.0 μ	1.2×10^{-6}	4.9 μ					
$^3P_0 - ^3P_1$	2.1×10^{-6}	204 μ	2.6×10^{-5}	88.4 μ	1.3×10^{-3}	24.3 μ	4.7×10^{-4}	33.5 μ	8.0×10^{-3}	13.1 μ					
$^3P_2 - ^5S_2$	$1.1 \times 10^{+2}$	2142.8	$5.2 \times 10^{+2}$	1666.2	$6.1 \times 10^{+3}$	1146.1	—	1728.9	—	—					
$^3P_1 - ^5S_1$	$4.8 \times 10^{+1}$	2139.0	$2.1 \times 10^{+2}$	1660.8	$2.4 \times 10^{+3}$	1137.0	—	1713.1	—	—					

TABLE 3.9

Transition probabilities of p^3 ions

[O II]			[Ne IV]			[S II]			[Ar IV]		
Transition	Transition probability (sec ⁻¹)	Wavelength (Å)	Transition probability (sec ⁻¹)	Wavelength (Å)	Transition probability (sec ⁻¹)	Wavelength (Å)	Transition probability (sec ⁻¹)	Wavelength (Å)	Transition probability (sec ⁻¹)	Wavelength (Å)	
² P _{1/2} - ² P _{3/2}	1.4 × 10 ⁻¹⁰	—	2.7 × 10 ⁻⁹	—	1.0 × 10 ⁻⁶	—	4.9 × 10 ⁻⁵	—			
² D _{5/2} - ² P _{3/2}	1.1 × 10 ⁻¹	7319.9	4.0 × 10 ⁻¹	4714.2	1.8 × 10 ⁻¹	10320.5	6.0 × 10 ⁻¹	7237.3			
² D _{3/2} - ² P _{3/2}	5.8 × 10 ⁻²	7330.7	4.4 × 10 ⁻¹	4724.2	1.3 × 10 ⁻¹	10286.7	7.9 × 10 ⁻¹	7170.6			
² D _{5/2} - ² P _{1/2}	5.6 × 10 ⁻²	7318.8	1.1 × 10 ⁻¹	4715.6	7.8 × 10 ⁻²	10370.5	1.2 × 10 ⁻¹	7331.4			
² D _{3/2} - ² P _{1/2}	9.4 × 10 ⁻²	7329.6	3.9 × 10 ⁻¹	4725.6	1.6 × 10 ⁻¹	10336.4	6.0 × 10 ⁻¹	7262.8			
⁴ S _{3/2} - ² P _{3/2}	5.8 × 10 ⁻²	2470.3	1.3	1602.0	2.2 × 10 ⁻¹	4068.6	2.6	2853.6			
⁴ S _{3/2} - ² P _{1/2}	2.4 × 10 ⁻²	2470.2	5.2 × 10 ⁻¹	1602.1	9.1 × 10 ⁻²	4076.4	8.6 × 10 ⁻¹	2868.2			
² D _{5/2} - ² D _{3/2}	1.3 × 10 ⁻⁷	—	1.5 × 10 ⁻⁶	—	3.3 × 10 ⁻⁷	—	2.3 × 10 ⁻⁵	—			
⁴ S _{3/2} - ² D _{5/2}	3.6 × 10 ⁻⁵	3728.8	4.8 × 10 ⁻⁴	2424.5	2.6 × 10 ⁻⁴	6716.4	1.8 × 10 ⁻³	4711.3			
⁴ S _{3/2} - ² D _{3/2}	1.8 × 10 ⁻⁴	3726.0	5.5 × 10 ⁻³	2421.8	8.8 × 10 ⁻⁴	6730.8	2.2 × 10 ⁻²	4740.2			

TABLE 3.10

Transition probabilities of p^4 ions

[O I]			[Ne III]			[Ar III]		
Transition	Transition probability (sec ⁻¹)	Wavelength (Å)	Transition probability (sec ⁻¹)	Wavelength (Å)	Transition probability (sec ⁻¹)	Wavelength (Å)	Transition probability (sec ⁻¹)	Wavelength (Å)
$1D_2 - 1S_0$	1.2	5577.4	2.7	3342.5	2.6	5191.8		
$3P_2 - 1S_0$	2.9×10^{-4}	2958.4	3.9×10^{-3}	1793.7	4.2×10^{-2}	3005.2		
$3P_1 - 1S_0$	7.3×10^{-2}	2972.3	2.0	1814.6	3.9	3109.2		
$3P_2 - 1D_2$	6.3×10^{-3}	6300.3	1.7×10^{-1}	3868.8	3.1×10^{-1}	7135.8		
$3P_1 - 1D_2$	2.1×10^{-3}	6363.8	5.4×10^{-2}	3967.5	8.2×10^{-2}	7751.1		
$3P_0 - 1D_2$	7.3×10^{-7}	6391.5	8.5×10^{-6}	4011.6	2.2×10^{-5}	8036.3		
$3P_1 - 3P_0$	1.7×10^{-5}	146 μ	1.2×10^{-3}	36.0 μ	5.2×10^{-3}	21.8 μ		
$3P_2 - 3P_0$	1.0×10^{-10}	44 μ	2.2×10^{-8}	10.9 μ	2.4×10^{-6}	6.4 μ		
$3P_2 - 3P_1$	8.9×10^{-5}	63 μ	6.0×10^{-3}	15.6 μ	3.1×10^{-2}	9.0 μ		