

**Table A1**  
**Transition frequencies of the  $\tilde{A} - \tilde{X}$  system for HSO (in  $\text{cm}^{-1}$ )**

	$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
$\tilde{A}(000) - \tilde{X}(000)$											
$K_a' - K_a'' = 0-1$											
P	0	0	0	0.5	1	1	0	1.5	14372.681	0.003	1.0
	0	0	0	0.5	1	1	0	0.5	14372.408	0.008	1.0
	1	0	1	1.5	2	1	1	2.5	14371.081	0.004	1.0
	1	0	1	0.5	2	1	1	1.5	14370.905	0.003	0.1
	2	0	2	2.5	3	1	2	3.5	14369.260	0.000	0.1
	3	0	3	3.5	4	1	3	4.5	14367.213	-0.005	0.1
Q	1	0	1	1.5	1	1	1	1.5	14373.838	0.005	1.0
	1	0	1	0.5	1	1	1	0.5	14373.571	-0.002	1.0
	2	0	2	2.5	2	1	2	2.5	14373.440	0.006	1.0
	2	0	2	1.5	2	1	2	1.5	14373.290	0.009	1.0
	3	0	3	3.5	3	1	3	3.5	14372.879	0.015	0.1
	3	0	3	2.5	3	1	3	2.5	14372.756	-0.003	0.1
	4	0	4	3.5	4	1	4	3.5	14372.048	0.012	0.1
R	2	0	2	2.5	1	1	0	1.5	14376.020	0.002	0.1
	2	0	2	1.5	1	1	0	0.5	14375.753	0.000	0.1
	3	0	3	3.5	2	1	1	2.5	14376.647	0.001	1.0
	3	0	3	2.5	2	1	1	1.5	14376.491	0.011	0.1
	4	0	4	4.5	3	1	2	3.5	14377.059	0.001	1.0
	4	0	4	3.5	3	1	2	2.5	14376.929	-0.002	1.0
	5	0	5	5.5	4	1	3	4.5	14377.252	0.009	0.1
$K_a' - K_a'' = 1-0$											
P	1	1	0	1.5	2	0	2	2.5	14389.541	-0.009	1.0
	1	1	0	0.5	2	0	2	1.5	14389.183	-0.006	1.0
	2	1	1	2.5	3	0	3	3.5	14387.818	0.001	1.0
	2	1	1	1.5	3	0	3	2.5	14387.624	-0.006	1.0
	3	1	2	3.5	4	0	4	4.5	14385.914	0.001	1.0
	3	1	2	2.5	4	0	4	3.5	14385.772	0.000	1.0
	4	1	3	4.5	5	0	5	5.5	14383.828	0.001	1.0
	4	1	3	3.5	5	0	5	4.5	14383.711	0.004	1.0
Q	1	1	1	1.5	1	0	1	1.5	14392.148	-0.005	1.0
	1	1	1	0.5	1	0	1	0.5	14391.817	0.007	1.0



**Table A1**

**Continued**

$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
3	2	1	3.5	2	1	1	2.5	14412.922	-0.004	1.0
3	2	1	2.5	2	1	1	1.5	14412.292	0.009	1.0
4	2	3	4.5	3	1	3	3.5	14413.563	0.008	0.1
4	2	3	3.5	3	1	3	2.5	14413.103	0.007	0.1
4	2	2	4.5	3	1	2	3.5	14413.298	0.005	0.1
4	2	2	3.5	3	1	2	2.5	14412.807	-0.002	0.1
5	2	4	5.5	4	1	4	4.5	14413.897	0.007	0.1

$\tilde{A}(001) - \tilde{X}(000)$

$$K_a' - K_a'' = 0-1$$

P	0	0	0	0.5	1	1	0	0.5	15079.802	-0.002	1.0
	1	0	1	1.5	2	1	1	2.5	15078.478	0.006	1.0
	1	0	1	0.5	2	1	1	1.5	15078.297	-0.001	1.0
	2	0	2	2.5	3	1	2	3.5	15076.647	0.006	1.0
	2	0	2	1.5	3	1	2	2.5	15076.499	-0.005	1.0
	3	0	3	3.5	4	1	3	4.5	15074.583	0.006	1.0
	3	0	3	2.5	4	1	3	3.5	15074.466	0.007	1.0
	4	0	4	4.5	5	1	4	5.5	15072.287	0.008	0.1
	4	0	4	3.5	5	1	4	4.5	15072.163	-0.007	0.1
Q	1	0	1	1.5	1	1	1	1.5	15081.234	0.005	1.0
	1	0	1	0.5	1	1	1	0.5	15080.972	0.004	1.0
	2	0	2	2.5	2	1	2	2.5	15080.825	0.010	1.0
	2	0	2	1.5	2	1	2	1.5	15080.668	0.005	1.0
	3	0	3	3.5	3	1	3	3.5	15080.221	-0.002	1.0
	3	0	3	2.5	3	1	3	2.5	15080.099	-0.017	1.0
	4	0	4	4.5	4	1	4	4.5	15079.453	0.008	1.0
	4	0	4	3.5	4	1	4	3.5	15079.368	0.005	1.0
	5	0	5	4.5	5	1	5	4.5	15078.422	0.010	0.1
	6	0	6	6.5	6	1	6	6.5	15077.316	-0.003	0.1
	6	0	6	5.5	6	1	6	5.5	15077.277	0.012	0.1
R	2	0	2	2.5	1	1	0	1.5	15083.401	0.002	1.0
	2	0	2	1.5	1	1	0	0.5	15083.141	0.009	1.0
	3	0	3	3.5	2	1	1	2.5	15084.015	0.010	1.0
	3	0	3	2.5	2	1	1	1.5	15083.849	0.010	1.0

**Table A1**

**Continued**

	$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
	4	0	4	4.5	3	1	2	3.5	15084.392	0.005	1.0
	4	0	4	3.5	3	1	2	2.5	15084.263	0.004	1.0
	5	0	5	5.5	4	1	3	4.5	15084.530	-0.006	1.0
	5	0	5	4.5	4	1	3	3.5	15084.429	0.002	1.0
	$K_a' - K_a'' = 1 - 0$										
P	1	1	0	1.5	2	0	2	2.5	15097.004	-0.001	1.0
	1	1	0	0.5	2	0	2	1.5	15096.613	-0.007	1.0
	2	1	1	2.5	3	0	3	3.5	15095.248	-0.007	1.0
	2	1	1	1.5	3	0	3	2.5	15095.053	-0.004	1.0
	3	1	2	3.5	4	0	4	4.5	15093.324	-0.005	1.0
	3	1	2	2.5	4	0	4	3.5	15093.169	-0.010	1.0
	4	1	3	4.5	5	0	5	5.5	15091.211	-0.003	1.0
	4	1	3	3.5	5	0	5	4.5	15091.079	-0.006	1.0
	5	1	4	5.5	6	0	6	6.5	15088.906	-0.002	1.0
	5	1	4	4.5	6	0	6	5.5	15088.796	0.006	1.0
Q	1	1	1	1.5	1	0	1	1.5	15099.601	-0.005	1.0
	1	1	1	0.5	1	0	1	0.5	15099.244	0.004	1.0
	2	1	2	2.5	2	0	2	2.5	15099.098	-0.005	1.0
	2	1	2	1.5	2	0	2	1.5	15098.932	-0.001	1.0
	3	1	3	3.5	3	0	3	3.5	15098.394	0.007	1.0
	3	1	3	2.5	3	0	3	2.5	15098.277	0.005	1.0
	4	1	4	4.5	4	0	4	4.5	15097.437	-0.009	1.0
	4	1	4	3.5	4	0	4	3.5	15097.362	0.000	1.0
	5	1	5	5.5	5	0	5	5.5	15096.268	-0.010	1.0
	5	1	5	4.5	5	0	5	4.5	15096.203	-0.010	1.0
R	1	1	0	1.5	0	0	0	0.5	15100.955	-0.009	1.0
	1	1	0	0.5	0	0	0	0.5	15100.590	-0.007	1.0
	2	1	1	2.5	1	0	1	1.5	15101.844	-0.014	1.0
	2	1	1	1.5	1	0	1	0.5	15101.676	0.002	1.0
	3	1	2	3.5	2	0	2	2.5	15102.572	-0.002	1.0
	3	1	2	2.5	2	0	2	1.5	15102.438	0.000	1.0
	4	1	3	4.5	3	0	3	3.5	15103.103	0.002	1.0
	4	1	3	3.5	3	0	3	2.5	15102.985	-0.001	1.0
	5	1	4	5.5	4	0	4	4.5	15103.429	-0.006	1.0

**Table A1**

**Continued**

	$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
	5	1	4	4.5	4	0	4	3.5	15103.327	-0.002	1.0
	6	1	5	6.5	5	0	5	5.5	15103.572	-0.002	0.1
	6	1	5	5.5	5	0	5	4.5	15103.463	-0.010	0.1
$K_a' - K_a'' = 2-1$											
P	2	2	1	2.5	3	1	3	3.5	15113.489	0.003	1.0
	2	2	1	1.5	3	1	3	2.5	15112.562	0.005	1.0
	2	2	0	2.5	3	1	2	3.5	15113.223	0.001	1.0
	2	2	0	1.5	3	1	2	2.5	15112.269	0.000	1.0
Q	2	2	0	2.5	2	1	2	2.5	15117.396	-0.001	1.0
	2	2	0	1.5	2	1	2	1.5	15116.423	-0.004	0.1
	2	2	1	2.5	2	1	1	2.5	15117.263	-0.004	1.0
	2	2	1	1.5	2	1	1	1.5	15116.279	-0.001	1.0
	3	2	1	3.5	3	1	3	3.5	15116.724	0.003	1.0
	3	2	1	2.5	3	1	3	2.5	15116.107	-0.004	1.0
	3	2	2	3.5	3	1	2	3.5	15116.448	-0.010	1.0
	3	2	2	2.5	3	1	2	2.5	15115.821	-0.001	1.0
	4	2	2	4.5	4	1	4	4.5	15115.900	0.004	1.0
	4	2	3	4.5	4	1	3	4.5	15115.458	0.005	1.0
	4	2	3	3.5	4	1	3	3.5	15114.963	0.000	1.0
R	2	2	1	2.5	1	1	1	1.5	15120.025	0.002	1.0
	2	2	1	1.5	1	1	1	0.5	15118.949	-0.001	1.0
	2	2	0	2.5	1	1	0	1.5	15119.976	-0.005	1.0
	2	2	0	1.5	1	1	0	0.5	15118.898	0.001	1.0
	3	2	2	3.5	2	1	2	2.5	15120.633	0.001	1.0
	3	2	1	3.5	2	1	1	2.5	15120.504	0.002	1.0
	3	2	1	2.5	2	1	1	1.5	15119.836	0.003	1.0
	4	2	3	4.5	3	1	3	3.5	15121.107	0.008	1.0
	4	2	2	4.5	3	1	2	3.5	15120.845	0.007	1.0
	4	2	2	3.5	3	1	2	2.5	15120.336	0.002	1.0
	5	2	4	5.5	4	1	4	4.5	15121.399	0.003	1.0
	5	2	4	4.5	4	1	4	3.5	15121.025	0.009	0.1
	5	2	3	5.5	4	1	3	4.5	15120.961	0.004	0.1

$\tilde{A}(002) - \tilde{X}(000)$

**Table A1**

**Continued**

	$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
$K_a' - K_a'' = 0-1$											
P	0	0	0	0.5	1	1	0	0.5	15779.697	0.007	1.0
	1	0	1	1.5	2	1	1	2.5	15778.355	0.004	1.0
	1	0	1	0.5	2	1	1	1.5	15778.180	0.004	0.1
	2	0	2	2.5	3	1	2	3.5	15776.505	0.001	1.0
	2	0	2	1.5	3	1	2	2.5	15776.369	0.001	0.1
	3	0	3	3.5	4	1	3	4.5	15774.436	0.020	1.0
	3	0	3	2.5	4	1	3	3.5	15774.293	-0.007	1.0
	4	0	4	4.5	5	1	4	5.5	15772.089	0.002	1.0
	4	0	4	3.5	5	1	4	4.5	15771.982	0.001	1.0
Q	1	0	1	1.5	1	1	1	1.5	15781.109	0.001	1.0
	1	0	1	0.5	1	1	1	0.5	15780.846	-0.002	1.0
	2	0	2	2.5	2	1	2	2.5	15780.676	-0.003	1.0
	2	0	2	1.5	2	1	2	1.5	15780.518	-0.008	1.0
	3	0	3	3.5	3	1	3	3.5	15780.052	-0.011	1.0
	3	0	3	2.5	3	1	3	2.5	15779.963	0.006	1.0
	4	0	4	4.5	4	1	4	4.5	15779.253	-0.001	1.0
	4	0	4	3.5	4	1	4	3.5	15779.177	0.003	0.1
	5	0	5	5.5	5	1	5	5.5	15778.254	0.007	0.1
	5	0	5	4.5	5	1	5	4.5	15778.180	-0.004	0.1
R	2	0	2	2.5	1	1	0	1.5	15783.260	-0.002	1.0
	2	0	2	1.5	1	1	0	0.5	15782.994	-0.002	1.0
	3	0	3	3.5	2	1	1	2.5	15783.847	0.003	1.0
	3	0	3	2.5	2	1	1	1.5	15783.681	0.002	1.0
	4	0	4	4.5	3	1	2	3.5	15784.197	0.002	1.0
	4	0	4	3.5	3	1	2	2.5	15784.072	0.003	1.0
	5	0	5	5.5	4	1	3	4.5	15784.305	-0.001	1.0
	5	0	5	4.5	4	1	3	3.5	15784.197	-0.001	0.1
$K_a' - K_a'' = 1-0$											
P	1	1	0	1.5	2	0	2	2.5	15796.939	-0.003	1.0
	1	1	0	0.5	2	0	2	1.5	15796.540	0.003	1.0
	2	1	1	2.5	3	0	3	3.5	15795.176	0.000	1.0
	2	1	1	1.5	3	0	3	2.5	15794.974	0.001	1.0
	3	1	2	3.5	4	0	4	4.5	15793.225	-0.002	1.0

**Table A1**

**Continued**

	$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
	3	1	2	2.5	4	0	4	3.5	15793.079	0.004	1.0
	4	1	3	4.5	5	0	5	5.5	15791.076	-0.005	1.0
	4	1	3	3.5	5	0	5	4.5	15790.955	0.001	1.0
	5	1	4	5.5	6	0	6	6.5	15788.742	0.005	0.1
	5	1	4	4.5	6	0	6	5.5	15788.615	-0.008	0.1
Q	1	1	1	1.5	1	0	1	1.5	15799.536	-0.007	1.0
	1	1	1	0.5	1	0	1	0.5	15799.157	0.002	1.0
	2	1	2	2.5	2	0	2	2.5	15799.022	-0.001	1.0
	2	1	2	1.5	2	0	2	1.5	15798.849	0.005	1.0
	3	1	3	3.5	3	0	3	3.5	15798.286	0.003	1.0
	3	1	3	2.5	3	0	3	2.5	15798.160	-0.001	1.0
	4	1	4	4.5	4	0	4	4.5	15797.312	0.003	1.0
	4	1	4	3.5	4	0	4	3.5	15797.214	-0.004	1.0
	5	1	5	5.5	5	0	5	5.5	15796.095	-0.005	1.0
	5	1	5	4.5	5	0	5	4.5	15796.025	-0.004	1.0
	6	1	6	6.5	6	0	6	6.5	15794.648	-0.005	1.0
	6	1	6	5.5	6	0	6	5.5	15794.598	0.001	1.0
R	1	1	0	1.5	0	0	0	0.5	15800.902	0.001	1.0
	1	1	0	0.5	0	0	0	0.5	15800.514	0.000	1.0
	2	1	1	2.5	1	0	1	1.5	15801.782	0.003	1.0
	2	1	1	1.5	1	0	1	0.5	15801.590	0.000	1.0
	3	1	2	3.5	2	0	2	2.5	15802.471	-0.001	1.0
	3	1	2	2.5	2	0	2	1.5	15802.336	0.001	1.0
	4	1	3	4.5	3	0	3	3.5	15802.968	-0.001	1.0
	4	1	3	3.5	3	0	3	2.5	15802.852	-0.003	1.0
	5	1	4	5.5	4	0	4	4.5	15803.261	-0.004	1.0
	5	1	4	4.5	4	0	4	3.5	15803.161	-0.002	1.0
	6	1	5	6.5	5	0	5	5.5	15803.360	0.001	1.0
	6	1	5	5.5	5	0	5	4.5	15803.261	-0.004	1.0
									$K_a' - K_a'' = 2-1$		
P	2	2	1	2.5	3	1	3	3.5	15813.587	0.005	1.0
	2	2	1	1.5	3	1	3	2.5	15812.605	0.001	1.0
	2	2	0	2.5	3	1	2	3.5	15813.326	0.007	1.0
	2	2	0	1.5	3	1	2	2.5	15812.325	0.009	0.1

**Table A1**

**Continued**

	$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
	3	2	2	3.5	4	1	4	4.5	15811.580	-0.005	1.0
	3	2	2	2.5	4	1	4	3.5	15810.974	0.001	1.0
	3	2	1	3.5	4	1	3	4.5	15811.147	0.004	1.0
	3	2	1	2.5	4	1	3	3.5	15810.502	0.003	0.1
	4	2	3	4.5	5	1	5	5.5	15809.429	-0.001	1.0
	4	2	3	3.5	5	1	5	4.5	15808.970	0.001	1.0
	4	2	2	4.5	5	1	4	5.5	15808.764	-0.001	1.0
	4	2	2	3.5	5	1	4	4.5	15808.266	0.000	0.1
Q	2	2	0	2.5	2	1	2	2.5	15816.497	0.004	1.0
	2	2	0	1.5	2	1	2	1.5	15816.476	0.002	1.0
	2	2	1	2.5	2	1	1	2.5	15817.360	-0.004	1.0
	2	2	1	1.5	2	1	1	1.5	15816.325	-0.001	1.0
	3	2	1	3.5	3	1	3	3.5	15816.789	-0.000	1.0
	3	2	1	2.5	3	1	3	2.5	15816.158	0.002	1.0
	3	2	2	3.5	3	1	2	3.5	15816.522	-0.004	1.0
	3	2	2	2.5	3	1	2	2.5	15815.865	-0.003	1.0
	4	2	2	4.5	4	1	4	4.5	15815.935	0.003	1.0
	4	2	3	4.5	4	1	3	4.5	15815.481	-0.007	1.0
	4	2	3	3.5	4	1	3	3.5	15814.988	0.004	1.0
	5	2	3	5.5	5	1	5	5.5	15814.898	0.003	0.1
	5	2	3	4.5	5	1	5	4.5	15814.514	-0.002	0.1
	5	2	4	5.5	5	1	4	5.5	15814.229	0.005	1.0
	5	2	4	4.5	5	1	4	4.5	15813.870	0.063	0.1
R	2	2	1	2.5	1	1	1	1.5	15820.116	-0.004	1.0
	2	2	1	1.5	1	1	1	0.5	15818.990	-0.007	1.0
	2	2	0	2.5	1	1	0	1.5	15820.072	-0.006	1.0
	2	2	0	1.5	1	1	0	0.5	15818.942	-0.003	1.0
	3	2	2	3.5	2	1	2	2.5	15820.699	-0.001	1.0
	3	2	2	2.5	2	1	2	1.5	15820.021	-0.005	1.0
	3	2	1	3.5	2	1	1	2.5	15820.566	-0.005	1.0
	3	2	1	2.5	2	1	1	1.5	15819.882	0.003	1.0
	4	2	3	4.5	3	1	3	3.5	15821.143	0.008	1.0
	4	2	3	3.5	3	1	3	2.5	15820.641	0.001	1.0
	4	2	2	4.5	3	1	2	3.5	15820.873	-0.000	1.0
	4	2	2	3.5	3	1	2	2.5	15820.359	0.005	0.1

**Table A1**

**Continued**

$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
5	2	4	5.5	4	1	4	4.5	15821.391	0.000	1.0
5	2	4	4.5	4	1	4	3.5	15821.009	0.009	0.1
5	2	3	5.5	4	1	3	4.5	15820.961	0.009	0.1
6	2	5	6.5	5	1	5	5.5	15821.464	0.005	1.0

$\tilde{A}(013) - \tilde{X}(001)$

$K_a' - K_a'' = 0-1$

P	1	0	1	1.5	2	1	1	2.5	16245.423	-0.002	1.0
	1	0	1	0.5	2	1	1	1.5	16245.232	-0.012	1.0
	2	0	2	2.5	3	1	2	3.5	16243.587	-0.004	1.0
	2	0	2	1.5	3	1	2	2.5	16243.443	-0.005	1.0
	3	0	3	3.5	4	1	3	4.5	16241.522	0.004	1.0
	3	0	3	2.5	4	1	3	3.5	16241.388	-0.007	0.1
Q	1	0	1	1.5	1	1	1	1.5	16248.180	0.007	1.0
	1	0	1	0.5	1	1	1	0.5	16247.903	0.001	1.0
	2	0	2	2.5	2	1	2	2.5	16247.759	0.002	1.0
	2	0	2	1.5	2	1	2	1.5	16247.602	0.006	1.0
	3	0	3	3.5	3	1	3	3.5	16247.167	0.004	1.0
	3	0	3	2.5	3	1	3	2.5	16247.040	-0.010	1.0
	4	0	4	4.5	4	1	4	4.5	16246.372	-0.009	1.0
	4	0	4	3.5	4	1	4	3.5	16246.297	0.004	0.1
R	2	0	2	2.5	1	1	0	1.5	16250.323	0.007	1.0
	2	0	2	1.5	1	1	0	0.5	16250.039	0.001	0.1
	3	0	3	3.5	2	1	1	2.5	16250.900	0.002	1.0
	3	0	3	2.5	2	1	1	1.5	16250.735	0.011	1.0
	4	0	4	4.5	3	1	2	3.5	16251.246	-0.006	1.0
	4	0	4	3.5	3	1	2	2.5	16251.115	-0.004	1.0
$K_a' - K_a'' = 1-0$											
P	1	1	0	1.5	2	0	2	2.5	16264.417	0.003	1.0
	1	1	0	0.5	2	0	2	1.5	16263.955	0.002	1.0
	2	1	1	2.5	3	0	3	3.5	16262.662	-0.005	1.0
	2	1	1	1.5	3	0	3	2.5	16262.440	-0.001	1.0
	3	1	2	3.5	4	0	4	4.5	16260.745	0.000	1.0
	3	1	2	2.5	4	0	4	3.5	16260.566	-0.008	1.0

**Table A1**

**Continued**

	$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
	4	1	3	4.5	5	0	5	5.5	16258.640	0.006	0.1
	4	1	3	3.5	5	0	5	4.5	16258.499	0.011	0.1
Q	1	1	1	1.5	1	0	1	1.5	16266.992	-0.000	1.0
	1	1	1	0.5	1	0	1	0.5	16266.555	0.004	1.0
	2	1	2	2.5	2	0	2	2.5	16266.475	0.004	1.0
	2	1	2	1.5	2	0	2	1.5	16266.274	-0.003	1.0
	3	1	3	3.5	3	0	3	3.5	16265.731	-0.004	1.0
	3	1	3	2.5	3	0	3	2.5	16265.604	-0.002	1.0
	4	1	4	4.5	4	0	4	4.5	16264.772	0.002	1.0
	4	1	4	3.5	4	0	4	3.5	16264.681	0.008	1.0
	5	1	5	5.5	5	0	5	5.5	16263.568	-0.002	1.0
	5	1	5	4.5	5	0	5	4.5	16263.483	-0.013	0.1
	6	1	6	6.5	6	0	6	6.5	16262.147	0.012	0.1
R	1	1	0	1.5	0	0	0	0.5	16268.346	-0.001	1.0
	1	1	0	0.5	0	0	0	0.5	16267.902	-0.001	1.0
	2	1	1	2.5	1	0	1	1.5	16269.224	-0.001	1.0
	2	1	1	1.5	1	0	1	0.5	16269.027	0.013	1.0
	3	1	2	3.5	2	0	2	2.5	16269.933	0.004	1.0
	3	1	2	2.5	2	0	2	1.5	16269.774	0.002	1.0
	4	1	3	4.5	3	0	3	3.5	16270.441	-0.003	1.0
	4	1	3	3.5	3	0	3	2.5	16270.305	-0.005	1.0
	5	1	4	5.5	4	0	4	4.5	16270.765	0.001	1.0
	5	1	4	4.5	4	0	4	3.5	16270.647	0.004	1.0
	$K_a' - K_a'' = 2-1$										
Q	2	2	0	2.5	2	1	2	2.5	16285.753	0.002	1.0
	2	2	0	1.5	2	1	2	1.5	16284.593	-0.016	0.1
	2	2	1	2.5	2	1	1	2.5	16285.607	-0.002	1.0
	2	2	1	1.5	2	1	1	1.5	16284.454	0.005	1.0
	3	2	1	3.5	3	1	3	3.5	16285.055	-0.003	1.0
	3	2	2	2.5	3	1	2	2.5	16284.054	0.002	1.0
	4	2	2	4.5	4	1	4	4.5	16284.224	0.001	0.1
	4	2	3	4.5	4	1	3	4.5	16283.742	0.006	0.1
	4	2	3	3.5	4	1	3	3.5	16283.182	-0.005	0.1
R	2	2	1	2.5	1	1	1	1.5	16288.358	0.001	1.0

**Table A1**

**Continued**

$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
2	2	1	1.5	1	1	1	0.5	16287.101	-0.007	1.0
2	2	0	2.5	1	1	0	1.5	16288.310	0.000	1.0
2	2	0	1.5	1	1	0	0.5	16287.049	-0.002	1.0
3	2	2	3.5	2	1	2	2.5	16288.930	-0.005	1.0
3	2	2	2.5	2	1	2	1.5	16288.201	0.001	1.0
3	2	1	3.5	2	1	1	2.5	16288.782	-0.011	0.1
3	2	1	2.5	2	1	1	1.5	16288.045	0.004	1.0
4	2	3	4.5	3	1	3	3.5	16289.382	0.002	1.0
4	2	2	4.5	3	1	2	3.5	16289.090	-0.003	1.0
4	2	2	3.5	3	1	2	2.5	16288.526	-0.004	1.0
5	2	4	5.5	4	1	4	4.5	16289.665	0.008	1.0

$\tilde{A}(003) - \tilde{X}(000)$

$$K_a' - K_a'' = 0-1$$

P	0	0	0	0.5	1	1	0	1.5	16472.449	-0.002	1.0
	0	0	0	0.5	1	1	0	0.5	16472.175	0.001	1.0
	1	0	1	1.5	2	1	1	2.5	16470.826	-0.001	1.0
	1	0	1	0.5	2	1	1	1.5	16470.644	-0.009	1.0
	2	0	2	2.5	3	1	2	3.5	16468.966	0.003	1.0
	2	0	2	1.5	3	1	2	2.5	16468.827	-0.001	1.0
	3	0	3	3.5	4	1	3	4.5	16466.857	0.004	1.0
	3	0	3	2.5	4	1	3	3.5	16466.726	-0.009	1.0
	4	0	4	4.5	5	1	4	5.5	16464.487	-0.004	1.0
	4	0	4	3.5	5	1	4	4.5	16464.385	0.001	1.0
	5	0	5	5.5	6	1	5	6.5	16461.870	-0.007	1.0
	5	0	5	4.5	6	1	5	5.5	16461.772	-0.005	1.0
Q	1	0	1	1.5	1	1	1	1.5	16473.592	0.009	1.0
	1	0	1	0.5	1	1	1	0.5	16473.324	0.001	1.0
	2	0	2	2.5	2	1	2	2.5	16473.146	0.008	1.0
	2	0	2	1.5	2	1	2	1.5	16472.980	-0.005	1.0
	3	0	3	3.5	3	1	3	3.5	16472.502	0.003	1.0
	3	0	3	2.5	3	1	3	2.5	16472.396	0.003	1.0
	4	0	4	4.5	4	1	4	4.5	16471.665	0.007	1.0
	4	0	4	3.5	4	1	4	3.5	16471.581	0.003	1.0

**Table A1**

**Continued**

	$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
	5	0	5	4.5	5	1	5	4.5	16470.553	0.005	1.0
	6	0	6	6.5	6	1	6	6.5	16469.363	0.004	1.0
	6	0	6	5.5	6	1	6	5.5	16469.313	0.005	1.0
	7	0	7	7.5	7	1	7	7.5	16467.901	0.004	1.0
	7	0	7	6.5	7	1	7	6.5	16467.861	0.005	1.0
R	2	0	2	2.5	1	1	0	1.5	16475.724	0.002	1.0
	2	0	2	1.5	1	1	0	0.5	16475.460	0.004	1.0
	3	0	3	3.5	2	1	1	2.5	16476.285	0.004	1.0
	3	0	3	2.5	2	1	1	1.5	16476.115	-0.000	1.0
	4	0	4	4.5	3	1	2	3.5	16476.602	0.002	1.0
	4	0	4	3.5	3	1	2	2.5	16476.482	0.009	1.0
	5	0	5	5.5	4	1	3	4.5	16476.676	0.006	1.0
	$K_a' - K_a'' = 1 - 0$										
P	1	1	0	1.5	2	0	2	2.5	16489.473	-0.007	1.0
	1	1	0	0.5	2	0	2	1.5	16489.055	0.007	1.0
	2	1	1	2.5	3	0	3	3.5	16487.698	0.002	1.0
	2	1	1	1.5	3	0	3	2.5	16487.484	-0.000	1.0
	3	1	2	3.5	4	0	4	4.5	16485.722	-0.000	1.0
	3	1	2	2.5	4	0	4	3.5	16485.560	-0.005	1.0
	4	1	3	4.5	5	0	5	5.5	16483.550	0.004	1.0
	4	1	3	3.5	5	0	5	4.5	16483.420	0.006	1.0
	5	1	4	5.5	6	0	6	6.5	16481.157	-0.007	1.0
	5	1	4	4.5	6	0	6	5.5	16481.042	-0.003	1.0
Q	1	1	1	1.5	1	0	1	1.5	16492.077	-0.004	1.0
	1	1	1	0.5	1	0	1	0.5	16491.664	-0.001	1.0
	2	1	2	2.5	2	0	2	2.5	16491.537	-0.005	1.0
	2	1	2	1.5	2	0	2	1.5	16491.346	-0.008	1.0
	3	1	3	3.5	3	0	3	3.5	16490.778	0.002	1.0
	3	1	3	2.5	3	0	3	2.5	16490.653	0.003	1.0
	4	1	4	4.5	4	0	4	4.5	16489.770	0.000	1.0
	4	1	4	3.5	4	0	4	3.5	16489.679	0.004	1.0
	5	1	5	5.5	5	0	5	5.5	16488.513	-0.006	1.0
	5	1	5	4.5	5	0	5	4.5	16488.444	-0.001	1.0
	6	1	6	6.5	6	0	6	6.5	16487.019	-0.006	1.0

**Table A1**

**Continued**

	$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
	6	1	6	5.5	6	0	6	5.5	16486.960	-0.005	1.0
R	1	1	0	1.5	0	0	0	0.5	16493.431	-0.008	1.0
	1	1	0	0.5	0	0	0	0.5	16493.023	-0.002	1.0
	2	1	1	2.5	1	0	1	1.5	16494.301	0.002	1.0
	2	1	1	1.5	1	0	1	0.5	16494.104	0.003	1.0
	3	1	2	3.5	2	0	2	2.5	16494.961	-0.007	1.0
	3	1	2	2.5	2	0	2	1.5	16494.818	-0.006	1.0
	4	1	3	4.5	3	0	3	3.5	16495.424	-0.009	1.0
	4	1	3	3.5	3	0	3	2.5	16495.307	-0.008	1.0
	5	1	4	5.5	4	0	4	4.5	16495.691	0.000	1.0
	5	1	4	4.5	4	0	4	3.5	16495.585	0.000	1.0
	$K_a' - K_a'' = 2-1$										
P	2	2	1	2.5	3	1	3	3.5	16506.275	-0.008	0.1
	2	2	1	1.5	3	1	3	2.5	16505.266	0.018	0.1
	2	2	0	2.5	3	1	2	3.5	16506.027	0.007	1.0
	2	2	0	1.5	3	1	2	2.5	16504.959	-0.001	1.0
Q	2	2	0	2.5	2	1	2	2.5	16510.193	-0.003	1.0
	2	2	0	1.5	2	1	2	1.5	16509.121	0.003	1.0
	2	2	1	2.5	2	1	1	2.5	16510.069	0.003	1.0
	2	2	1	1.5	2	1	1	1.5	16508.975	0.004	1.0
	3	2	1	3.5	3	1	3	3.5	16509.463	0.001	1.0
	3	2	1	2.5	3	1	3	2.5	16508.797	-0.006	1.0
	3	2	2	3.5	3	1	2	3.5	16509.205	0.007	1.0
	3	2	2	2.5	3	1	2	2.5	16508.509	-0.006	1.0
	4	2	2	4.5	4	1	4	4.5	16508.570	-0.000	1.0
	4	2	2	3.5	4	1	4	3.5	16508.082	0.004	1.0
	4	2	3	4.5	4	1	3	4.5	16508.122	-0.005	1.0
	4	2	3	3.5	4	1	3	3.5	16507.599	-0.005	1.0
	5	2	3	5.5	5	1	5	5.5	16507.497	0.005	1.0
	5	2	3	4.5	5	1	5	4.5	16507.103	0.004	1.0
	5	2	4	5.5	5	1	4	5.5	16506.817	-0.005	1.0
	5	2	4	4.5	5	1	4	4.5	16506.380	-0.009	1.0
R	2	2	1	2.5	1	1	1	1.5	16512.828	0.007	1.0

**Table A1**

**Continued**

$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
2	2	1	1.5	1	1	1	0.5	16511.640	-0.001	1.0
2	2	0	2.5	1	1	0	1.5	16512.780	0.001	1.0
2	2	0	1.5	1	1	0	0.5	16511.586	-0.003	1.0
3	2	2	3.5	2	1	2	2.5	16513.378	0.004	1.0
3	2	2	2.5	2	1	2	1.5	16512.677	0.005	1.0
3	2	1	3.5	2	1	1	2.5	16513.258	0.014	0.1
3	2	1	2.5	2	1	1	1.5	16512.528	0.003	1.0
4	2	3	4.5	3	1	3	3.5	16513.774	0.001	1.0
4	2	3	3.5	3	1	3	2.5	16513.258	-0.002	1.0
4	2	2	4.5	3	1	2	3.5	16513.511	-0.000	1.0
4	2	2	3.5	3	1	2	2.5	16512.982	0.008	1.0
5	2	4	5.5	4	1	4	4.5	16514.001	0.012	0.1
5	2	3	5.5	4	1	3	4.5	16513.543	-0.008	1.0

$\tilde{A}(004) - \tilde{X}(000)$

$K_a' - K_a'' = 0-1$

P	0	0	0	0.5	1	1	0	1.5	17157.644	0.006	0.1
	0	0	0	0.5	1	1	0	0.5	17157.359	-0.001	1.0
	1	0	1	1.5	2	1	1	2.5	17156.007	0.001	1.0
	1	0	1	0.5	2	1	1	1.5	17155.835	0.004	1.0
	2	0	2	2.5	3	1	2	3.5	17154.124	-0.003	1.0
	2	0	2	1.5	3	1	2	2.5	17153.990	0.001	1.0
	3	0	3	3.5	4	1	3	4.5	17151.998	0.005	1.0
	3	0	3	2.5	4	1	3	3.5	17151.877	0.003	1.0
	4	0	4	4.5	5	1	4	5.5	17149.593	-0.007	1.0
	4	0	4	3.5	5	1	4	4.5	17149.485	-0.006	1.0
	5	0	5	5.5	6	1	5	6.5	17146.945	-0.001	1.0
	5	0	5	4.5	6	1	5	5.5	17146.838	-0.005	1.0
Q	1	0	1	1.5	1	1	1	1.5	17158.756	-0.006	1.0
	1	0	1	0.5	1	1	1	0.5	17158.500	-0.001	1.0
	2	0	2	2.5	2	1	2	2.5	17158.296	-0.005	1.0
	2	0	2	1.5	2	1	2	1.5	17158.139	-0.008	1.0
	3	0	3	3.5	3	1	3	3.5	17157.644	0.005	0.1
	3	0	3	2.5	3	1	3	2.5	17157.528	-0.003	1.0

**Table A1**

**Continued**

	$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
	4	0	4	4.5	4	1	4	4.5	17156.771	0.004	1.0
	4	0	4	3.5	4	1	4	3.5	17156.685	0.001	1.0
	5	0	5	5.5	5	1	5	5.5	17155.680	-0.001	1.0
	5	0	5	4.5	5	1	5	4.5	17155.614	-0.001	1.0
	6	0	6	6.5	6	1	6	6.5	17154.375	-0.005	1.0
	6	0	6	5.5	6	1	6	5.5	17154.328	0.002	1.0
	7	0	7	6.5	7	1	7	6.5	17152.814	-0.004	0.1
R	2	0	2	2.5	1	1	0	1.5	17160.880	-0.005	1.0
	2	0	2	1.5	1	1	0	0.5	17160.610	-0.008	1.0
	3	0	3	3.5	2	1	1	2.5	17161.411	-0.010	1.0
	3	0	3	2.5	2	1	1	1.5	17161.254	0.001	1.0
	4	0	4	4.5	3	1	2	3.5	17161.704	-0.004	1.0
	4	0	4	3.5	3	1	2	2.5	17161.569	-0.010	1.0
	5	0	5	4.5	4	1	3	3.5	17161.622	-0.007	1.0
								$K_a' - K_a'' = 1 - 0$			
P	1	1	0	1.5	2	0	2	2.5	17174.722	0.001	1.0
	1	1	0	0.5	2	0	2	1.5	17174.264	0.000	1.0
	2	1	1	2.5	3	0	3	3.5	17172.926	0.004	1.0
	2	1	1	1.5	3	0	3	2.5	17172.698	-0.003	1.0
	3	1	2	3.5	4	0	4	4.5	17170.920	-0.007	1.0
	3	1	2	2.5	4	0	4	3.5	17170.764	0.003	1.0
	4	1	3	4.5	5	0	5	5.5	17168.718	-0.004	1.0
	4	1	3	3.5	5	0	5	4.5	17168.582	0.001	1.0
	5	1	4	5.5	6	0	6	6.5	17166.293	-0.011	0.1
	5	1	4	4.5	6	0	6	5.5	17166.180	0.004	1.0
	6	1	5	6.5	7	0	7	7.5	17163.668	-0.005	1.0
	6	1	5	5.5	7	0	7	6.5	17163.552	0.000	1.0
Q	1	1	1	1.5	1	0	1	1.5	17177.324	0.004	1.0
	1	1	1	0.5	1	0	1	0.5	17176.892	0.011	1.0
	2	1	2	2.5	2	0	2	2.5	17176.766	0.004	1.0
	2	1	2	1.5	2	0	2	1.5	17176.577	0.008	1.0
	3	1	3	3.5	3	0	3	3.5	17175.973	0.004	1.0
	3	1	3	2.5	3	0	3	2.5	17175.843	0.004	1.0



**Table A1**

**Continued**

	$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
Q	2	2	0	2.5	2	1	2	2.5	17195.596	0.003	1.0
	2	2	0	1.5	2	1	2	1.5	17194.459	-0.003	1.0
	2	2	1	2.5	2	1	1	2.5	17195.467	0.004	0.1
	2	2	1	1.5	2	1	1	1.5	17194.307	-0.007	1.0
	3	2	1	3.5	3	1	3	3.5	17194.828	-0.003	1.0
	3	2	1	2.5	3	1	3	2.5	17194.148	-0.000	1.0
	3	2	2	3.5	3	1	2	3.5	17194.563	-0.005	1.0
	3	2	2	2.5	3	1	2	2.5	17193.867	0.007	1.0
	4	2	2	4.5	4	1	4	4.5	17193.899	-0.007	1.0
	4	2	2	3.5	4	1	4	3.5	17193.395	-0.002	1.0
	4	2	3	4.5	4	1	3	4.5	17193.456	-0.006	1.0
	4	2	3	3.5	4	1	3	3.5	17192.918	-0.003	1.0
	5	2	3	5.5	5	1	5	5.5	17192.775	-0.011	0.1
	5	2	3	4.5	5	1	5	4.5	17192.370	-0.008	1.0
	5	2	4	5.5	5	1	4	5.5	17192.126	0.010	1.0
R	2	2	1	2.5	1	1	1	1.5	17198.217	-0.002	1.0
	2	2	1	1.5	1	1	1	0.5	17196.981	-0.005	1.0
	2	2	0	2.5	1	1	0	1.5	17198.176	-0.001	1.0
	2	2	0	1.5	1	1	0	0.5	17196.939	0.006	1.0
	3	2	2	3.5	2	1	2	2.5	17198.744	0.001	1.0
	3	2	2	2.5	2	1	2	1.5	17198.022	0.004	1.0
	3	2	1	3.5	2	1	1	2.5	17198.608	-0.005	1.0
	3	2	1	2.5	2	1	1	1.5	17197.868	-0.003	1.0
	4	2	3	4.5	3	1	3	3.5	17199.105	-0.004	1.0
	4	2	2	4.5	3	1	2	3.5	17198.853	0.006	1.0
	4	2	2	3.5	3	1	2	2.5	17198.290	-0.002	1.0
	5	2	4	5.5	4	1	4	4.5	17199.279	-0.004	1.0
5	2	3	4.5	4	1	3	3.5	17198.389	-0.003	1.0	
$\tilde{A}(005) - \tilde{X}(000)$											
$K_a' - K_a'' = 0-1$											
P	0	0	0	0.5	1	1	0	0.5	17835.317	0.008	1.0
	1	0	1	1.5	2	1	1	2.5	17833.942	-0.005	1.0
	1	0	1	0.5	2	1	1	1.5	17833.762	-0.007	1.0



**Table A1**

**Continued**

	$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
	3	1	3	3.5	3	0	3	3.5	17853.926	-0.002	1.0
	3	1	3	2.5	3	0	3	2.5	17853.791	0.005	1.0
	4	1	4	4.5	4	0	4	4.5	17852.849	-0.005	1.0
	4	1	4	3.5	4	0	4	3.5	17852.741	-0.004	1.0
	5	1	5	5.5	5	0	5	5.5	17851.522	0.003	1.0
	5	1	5	4.5	5	0	5	4.5	17851.428	-0.001	1.0
R	1	1	0	1.5	0	0	0	0.5	17856.679	-0.000	1.0
	1	1	0	0.5	0	0	0	0.5	17856.213	-0.003	1.0
	2	1	1	2.5	1	0	1	1.5	17857.508	0.001	1.0
	2	1	1	1.5	1	0	1	0.5	17857.291	-0.000	1.0
	3	1	2	3.5	2	0	2	2.5	17858.128	-0.003	1.0
	3	1	2	2.5	2	0	2	1.5	17857.980	0.008	1.0
	4	1	3	4.5	3	0	3	3.5	17858.540	0.004	1.0
	4	1	3	3.5	3	0	3	2.5	17858.402	0.001	1.0
	5	1	4	5.5	4	0	4	4.5	17858.716	-0.002	1.0
									$K_a' - K_a'' = 2-1$		
P	2	2	1	2.5	3	1	3	3.5	17869.837	-0.001	1.0
	2	2	1	1.5	3	1	3	2.5	17868.700	0.006	1.0
	2	2	0	2.5	3	1	2	3.5	17869.578	0.003	1.0
	2	2	0	1.5	3	1	2	2.5	17868.410	0.004	0.1
	3	2	2	3.5	4	1	4	4.5	17867.761	0.005	1.0
	3	2	2	2.5	4	1	4	3.5	17867.077	0.008	0.1
	3	2	1	3.5	4	1	3	4.5	17867.310	-0.004	0.1
Q	2	2	0	2.5	2	1	2	2.5	17873.751	0.002	1.0
	2	2	0	1.5	2	1	2	1.5	17872.562	-0.002	1.0
	2	2	1	2.5	2	1	1	2.5	17873.612	-0.007	1.0
	2	2	1	1.5	2	1	1	1.5	17872.413	-0.003	1.0
	3	2	1	3.5	3	1	3	3.5	17872.961	0.000	1.0
	3	2	1	2.5	3	1	3	2.5	17872.251	-0.001	1.0
	3	2	2	3.5	3	1	2	3.5	17872.690	-0.007	0.1
	3	2	2	2.5	3	1	2	2.5	17871.964	0.000	1.0
	4	2	2	4.5	4	1	4	4.5	17871.997	-0.004	0.1
	4	2	2	3.5	4	1	4	3.5	17871.470	-0.002	1.0

**Table A1**

**Continued**

	$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
	4	2	3	4.5	4	1	3	4.5	17871.556	-0.001	1.0
	4	2	3	3.5	4	1	3	3.5	17870.995	-0.001	0.1
R	2	2	1	2.5	1	1	1	1.5	17876.364	-0.012	0.1
	2	2	1	1.5	1	1	1	0.5	17875.085	-0.003	1.0
	2	2	0	2.5	1	1	0	1.5	17876.329	-0.005	1.0
	2	2	0	1.5	1	1	0	0.5	17875.037	0.002	1.0
	3	2	2	3.5	2	1	2	2.5	17876.870	-0.001	1.0
	3	2	2	2.5	2	1	2	1.5	17876.124	0.002	1.0
	3	2	1	3.5	2	1	1	2.5	17876.740	-0.003	1.0
	3	2	1	2.5	2	1	1	1.5	17875.976	0.001	1.0
	4	2	3	4.5	3	1	3	3.5	17877.206	0.002	1.0
	4	2	3	3.5	3	1	3	2.5	17876.655	0.002	1.0
	4	2	2	4.5	3	1	2	3.5	17876.946	0.004	1.0
	4	2	2	3.5	3	1	2	2.5	17876.364	-0.003	0.1
	5	2	4	5.5	4	1	4	4.5	17877.344	0.008	0.1

$\tilde{A}(006) - \tilde{X}(000)$

$K_a' - K_a'' = 0-1$

P	0	0	0	0.5	1	1	0	1.5	18506.290	-0.005	1.0
	0	0	0	0.5	1	1	0	0.5	18506.010	-0.007	1.0
	1	0	1	1.5	2	1	1	2.5	18504.635	-0.011	1.0
	1	0	1	0.5	2	1	1	1.5	18504.462	-0.007	1.0
	2	0	2	2.5	3	1	2	3.5	18502.734	0.001	1.0
	2	0	2	1.5	3	1	2	2.5	18502.588	-0.006	1.0
	3	0	3	3.5	4	1	3	4.5	18500.549	0.002	1.0
	3	0	3	2.5	4	1	3	3.5	18500.426	-0.001	1.0
Q	1	0	1	1.5	1	1	1	1.5	18507.402	0.001	1.0
	1	0	1	0.5	1	1	1	0.5	18507.131	-0.009	1.0
	2	0	2	2.5	2	1	2	2.5	18506.899	-0.008	1.0
	2	0	2	1.5	2	1	2	1.5	18506.741	-0.011	1.0
	3	0	3	3.5	3	1	3	3.5	18506.202	0.009	1.0
	3	0	3	2.5	3	1	3	2.5	18506.084	0.000	1.0

**Table A1**

**Continued**

	$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
	4	0	4	4.5	4	1	4	4.5	18505.255	0.002	1.0
	4	0	4	3.5	4	1	4	3.5	18505.169	0.001	1.0
	5	0	5	5.5	5	1	5	5.5	18504.077	-0.005	1.0
	5	0	5	4.5	5	1	5	4.5	18504.011	-0.003	1.0
R	2	0	2	2.5	1	1	0	1.5	18509.491	-0.000	1.0
	2	0	2	1.5	1	1	0	0.5	18509.220	-0.002	1.0
	3	0	3	3.5	2	1	1	2.5	18509.985	0.011	1.0
	3	0	3	2.5	2	1	1	1.5	18509.807	0.001	1.0
	4	0	4	4.5	3	1	2	3.5	18510.196	0.002	1.0
	4	0	4	3.5	3	1	2	2.5	18510.063	-0.001	1.0
	$K_a' - K_a'' = 1 - 0$										
P	1	1	0	1.5	2	0	2	2.5	18523.472	-0.001	1.0
	1	1	0	0.5	2	0	2	1.5	18522.961	0.001	1.0
	2	1	1	2.5	3	0	3	3.5	18521.644	0.007	1.0
	2	1	1	1.5	3	0	3	2.5	18521.405	0.005	1.0
	3	1	2	3.5	4	0	4	4.5	18519.583	-0.008	1.0
	3	1	2	2.5	4	0	4	3.5	18519.403	-0.010	1.0
Q	1	1	1	1.5	1	0	1	1.5	18526.072	0.000	1.0
	1	1	1	0.5	1	0	1	0.5	18525.576	-0.001	1.0
	2	1	2	2.5	2	0	2	2.5	18525.479	0.004	1.0
	2	1	2	1.5	2	0	2	1.5	18525.265	-0.002	1.0
	3	1	3	3.5	3	0	3	3.5	18524.633	0.005	1.0
	3	1	3	2.5	3	0	3	2.5	18524.493	0.005	1.0
	4	1	4	4.5	4	0	4	4.5	18523.521	0.005	1.0
	4	1	4	3.5	4	0	4	3.5	18523.419	0.008	1.0
	5	1	5	5.5	5	0	5	5.5	18522.136	0.003	1.0
	5	1	5	4.5	5	0	5	4.5	18522.048	-0.002	1.0
R	1	1	0	1.5	0	0	0	0.5	18527.434	0.002	1.0
	1	1	0	0.5	0	0	0	0.5	18526.942	0.005	1.0
	2	1	1	2.5	1	0	1	1.5	18528.247	0.007	1.0
	2	1	1	1.5	1	0	1	0.5	18528.021	0.004	1.0
	3	1	2	3.5	2	0	2	2.5	18528.836	-0.001	1.0
	3	1	2	2.5	2	0	2	1.5	18528.671	-0.002	1.0

**Table A1**

**Continued**

	$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
	4	1	3	4.5	3	0	3	3.5	18529.210	0.005	1.0
	4	1	3	3.5	3	0	3	2.5	18529.080	0.011	1.0
	5	1	4	5.5	4	0	4	4.5	18529.351	0.008	1.0
	5	1	4	4.5	4	0	4	3.5	18529.210	-0.010	0.1
$K_a' - K_a'' = 2 - 1$											
P	2	2	1	2.5	3	1	3	3.5	18540.727	0.001	1.0
	2	2	0	2.5	3	1	2	3.5	18540.470	0.007	1.0
	2	2	0	1.5	3	1	2	2.5	18539.233	0.003	1.0
Q	2	2	0	2.5	2	1	2	2.5	18544.641	0.003	1.0
	2	2	0	1.5	2	1	2	1.5	18543.387	-0.001	1.0
	2	2	1	2.5	2	1	1	2.5	18544.512	0.004	1.0
	2	2	1	1.5	2	1	1	1.5	18543.242	0.001	1.0
	3	2	1	3.5	3	1	3	3.5	18543.813	-0.004	1.0
	3	2	1	2.5	3	1	3	2.5	18543.088	-0.001	1.0
	4	2	2	4.5	4	1	4	4.5	18542.808	-0.010	1.0
	4	2	2	3.5	4	1	4	3.5	18542.272	-0.005	1.0
	4	2	3	4.5	4	1	3	4.5	18542.363	-0.011	1.0
	4	2	3	3.5	4	1	3	3.5	18541.805	0.004	1.0
	5	2	3	5.5	5	1	5	5.5	18541.602	-0.009	1.0
	5	2	3	4.5	5	1	5	4.5	18541.176	-0.001	1.0
	5	2	4	5.5	5	1	4	5.5	18540.937	-0.003	1.0
R	2	2	1	2.5	1	1	1	1.5	18547.270	0.007	1.0
	2	2	1	1.5	1	1	1	0.5	18545.911	-0.001	1.0
	2	2	0	2.5	1	1	0	1.5	18547.228	0.007	1.0
	2	2	0	1.5	1	1	0	0.5	18545.856	-0.003	1.0
	3	2	2	2.5	2	1	2	1.5	18546.960	0.002	1.0
	3	2	1	3.5	2	1	1	2.5	18547.598	-0.000	1.0
	3	2	1	2.5	2	1	1	1.5	18546.809	-0.002	1.0
	4	2	3	4.5	3	1	3	3.5	18548.018	-0.003	1.0
	4	2	3	3.5	3	1	3	2.5	18547.464	0.006	1.0
	4	2	2	4.5	3	1	2	3.5	18547.754	-0.005	1.0
	4	2	2	3.5	3	1	2	2.5	18547.175	0.003	1.0

**Table A1**

**Continued**

	$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
	5	2	4	5.5	4	1	4	4.5	18548.109	0.002	1.0
	5	2	3	5.5	4	1	3	4.5	18547.663	-0.006	1.0
$\tilde{A}(007) - \tilde{X}(000)$											
$K_a' - K_a'' = 0-1$											
P	0	0	0	0.5	1	1	0	1.5	19169.670	-0.005	1.0
	0	0	0	0.5	1	1	0	0.5	19169.401	0.004	1.0
	1	0	1	1.5	2	1	1	2.5	19168.011	-0.006	1.0
	1	0	1	0.5	2	1	1	1.5	19167.833	-0.007	1.0
	2	0	2	2.5	3	1	2	3.5	19166.087	0.001	1.0
	2	0	2	1.5	3	1	2	2.5	19165.946	-0.001	1.0
	3	0	3	3.5	4	1	3	4.5	19163.876	0.002	1.0
	3	0	3	2.5	4	1	3	3.5	19163.751	-0.002	1.0
Q	1	0	1	1.5	1	1	1	1.5	19170.771	-0.002	1.0
	1	0	1	0.5	1	1	1	0.5	19170.508	-0.003	1.0
	2	0	2	2.5	2	1	2	2.5	19170.264	0.003	1.0
	2	0	2	1.5	2	1	2	1.5	19170.104	-0.001	1.0
	3	0	3	3.5	3	1	3	3.5	19169.519	-0.001	1.0
R	2	0	2	2.5	1	1	0	1.5	19172.848	0.003	1.0
	2	0	2	1.5	1	1	0	0.5	19172.578	0.002	1.0
	3	0	3	3.5	2	1	1	2.5	19173.299	-0.003	1.0
	3	0	3	2.5	2	1	1	1.5	19173.134	0.002	1.0
	4	0	4	4.5	3	1	2	3.5	19173.485	-0.001	1.0
	4	0	4	3.5	3	1	2	2.5	19173.354	0.001	1.0
$K_a' - K_a'' = 1-0$											
P	1	1	0	1.5	2	0	2	2.5	19186.890	-0.001	1.0
	1	1	0	0.5	2	0	2	1.5	19186.350	-0.005	1.0
	2	1	1	2.5	3	0	3	3.5	19185.033	-0.005	1.0
	2	1	1	1.5	3	0	3	2.5	19184.793	-0.002	1.0
Q	1	1	1	1.5	1	0	1	1.5	19189.486	-0.003	1.0
	1	1	1	0.5	1	0	1	0.5	19188.970	-0.001	1.0

**Table A1**

**Continued**

	$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
	2	1	2	2.5	2	0	2	2.5	19188.874	0.002	1.0
	2	1	2	1.5	2	0	2	1.5	19188.660	0.001	1.0
	3	1	3	3.5	3	0	3	3.5	19188.002	0.005	1.0
	3	1	3	2.5	3	0	3	2.5	19187.852	-0.000	1.0
	4	1	4	4.5	4	0	4	4.5	19186.845	0.000	1.0
	4	1	4	3.5	4	0	4	3.5	19186.739	0.003	1.0
R	1	1	0	1.5	0	0	0	0.5	19190.852	0.002	1.0
	1	1	0	0.5	0	0	0	0.5	19190.335	0.004	1.0
	2	1	1	2.5	1	0	1	1.5	19191.641	0.000	1.0
	2	1	1	1.5	1	0	1	0.5	19191.415	0.003	1.0
	3	1	2	3.5	2	0	2	2.5	19192.220	0.008	1.0
	3	1	2	2.5	2	0	2	1.5	19192.047	0.003	1.0
	4	1	3	4.5	3	0	3	3.5	19192.550	0.002	1.0
	4	1	3	3.5	3	0	3	2.5	19192.412	0.006	1.0
	5	1	4	5.5	4	0	4	4.5	19192.644	-0.001	1.0
	5	1	4	4.5	4	0	4	3.5	19192.513	-0.004	1.0
									$K_a' - K_a'' = 2-1$		
Q	2	2	0	2.5	2	1	2	2.5	19208.183	0.009	1.0
	2	2	0	1.5	2	1	2	1.5	19206.876	0.003	1.0
	2	2	1	2.5	2	1	1	2.5	19208.043	-0.001	1.0
	2	2	1	1.5	2	1	1	1.5	19206.727	0.001	1.0
	3	2	1	3.5	3	1	3	3.5	19207.325	0.002	1.0
	3	2	1	2.5	3	1	3	2.5	19206.578	-0.001	1.0
	3	2	2	3.5	3	1	2	3.5	19207.059	-0.000	1.0
	3	2	2	2.5	3	1	2	2.5	19206.284	-0.006	1.0
	4	2	2	4.5	4	1	4	4.5	19206.284	-0.004	1.0
	4	2	2	3.5	4	1	4	3.5	19205.738	0.003	1.0
	4	2	3	4.5	4	1	3	4.5	19205.841	-0.003	1.0
	4	2	3	3.5	4	1	3	3.5	19205.257	-0.002	1.0
R	2	2	1	2.5	1	1	1	1.5	19210.802	0.001	1.0
	2	2	1	1.5	1	1	1	0.5	19209.393	-0.003	1.0

**Table A1**

**Continued**

$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
2	2	0	2.5	1	1	0	1.5	19210.760	0.002	1.0
2	2	0	1.5	1	1	0	0.5	19209.345	0.001	1.0
3	2	2	3.5	2	1	2	2.5	19211.228	-0.006	1.0
3	2	2	2.5	2	1	2	1.5	19210.450	0.002	1.0
3	2	1	3.5	2	1	1	2.5	19211.105	0.001	1.0
3	2	1	2.5	2	1	1	1.5	19210.305	0.004	1.0
4	2	3	4.5	3	1	3	3.5	19211.488	-0.003	1.0
4	2	3	3.5	3	1	3	2.5	19210.912	-0.004	1.0
4	2	2	4.5	3	1	2	3.5	19211.228	-0.001	1.0
4	2	2	3.5	3	1	2	2.5	19210.629	-0.001	1.0

$\tilde{A}(008) - \tilde{X}(000)$

$K_a' - K_a'' = 0-1$

P	0	0	0	0.5	1	1	0	1.5	19825.575	-0.001	1.0
	0	0	0	0.5	1	1	0	0.5	19825.306	0.007	1.0
	1	0	1	1.5	2	1	1	2.5	19823.902	-0.006	1.0
	1	0	1	0.5	2	1	1	1.5	19823.735	0.003	1.0
	2	0	2	2.5	3	1	2	3.5	19821.950	-0.007	1.0
	2	0	2	1.5	3	1	2	2.5	19821.815	-0.004	1.0
	3	0	3	3.5	4	1	3	4.5	19819.717	0.002	1.0
	3	0	3	2.5	4	1	3	3.5	19819.596	0.001	1.0
Q	1	0	1	1.5	1	1	1	1.5	19826.666	0.002	1.0
	1	0	1	0.5	1	1	1	0.5	19826.404	0.001	1.0
	2	0	2	2.5	2	1	2	2.5	19826.131	-0.001	1.0
	2	0	2	1.5	2	1	2	1.5	19825.968	-0.009	1.0
	3	0	3	3.5	3	1	3	3.5	19825.361	-0.001	1.0
	3	0	3	2.5	3	1	3	2.5	19825.254	0.002	1.0
	4	0	4	4.5	4	1	4	4.5	19824.346	0.001	1.0
	4	0	4	3.5	4	1	4	3.5	19824.268	0.007	1.0
	5	0	5	5.5	5	1	5	5.5	19823.085	0.005	1.0
	5	0	5	4.5	5	1	5	4.5	19823.017	0.005	1.0

**Table A1**

**Continued**

	$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
R	2	0	2	2.5	1	1	0	1.5	19828.707	-0.009	1.0
	3	0	3	2.5	2	1	1	1.5	19828.976	0.001	1.0
	4	0	4	4.5	3	1	2	3.5	19829.291	0.004	1.0
	4	0	4	3.5	3	1	2	2.5	19829.163	0.007	1.0
$K_a' - K_a'' = 1 - 0$											
P	1	1	0	1.5	2	0	2	2.5	19842.817	0.002	1.0
	2	1	1	2.5	3	0	3	3.5	19840.939	-0.000	1.0
	2	1	1	1.5	3	0	3	2.5	19840.692	-0.002	1.0
	3	1	2	3.5	4	0	4	4.5	19838.837	0.001	1.0
	3	1	2	2.5	4	0	4	3.5	19838.649	-0.004	1.0
	4	1	3	4.5	5	0	5	5.5	19836.482	-0.008	1.0
	4	1	3	3.5	5	0	5	4.5	19836.335	0.000	1.0
Q	1	1	1	1.5	1	0	1	1.5	19845.413	-0.002	1.0
	1	1	1	0.5	1	0	1	0.5	19844.870	0.003	1.0
	2	1	2	2.5	2	0	2	2.5	19844.779	0.002	1.0
	2	1	2	1.5	2	0	2	1.5	19844.562	0.003	1.0
	3	1	3	3.5	3	0	3	3.5	19843.871	-0.001	1.0
	3	1	3	2.5	3	0	3	2.5	19843.725	0.000	1.0
	4	1	4	4.5	4	0	4	4.5	19842.685	0.003	1.0
	4	1	4	3.5	4	0	4	3.5	19842.569	-0.003	1.0
	5	1	5	5.5	5	0	5	5.5	19841.204	0.000	1.0
	5	1	5	4.5	5	0	5	4.5	19841.118	0.002	1.0
	6	1	6	6.5	6	0	6	6.5	19839.437	0.002	1.0
	6	1	6	5.5	6	0	6	5.5	19839.360	-0.004	1.0
	7	1	7	7.5	7	0	7	7.5	19837.376	0.001	1.0
	7	1	7	6.5	7	0	7	6.5	19837.314	-0.004	1.0
R	1	1	0	1.5	0	0	0	0.5	19846.782	0.009	1.0
	1	1	0	0.5	0	0	0	0.5	19846.217	-0.011	1.0
	2	1	1	2.5	1	0	1	1.5	19847.543	0.001	1.0
	2	1	1	1.5	1	0	1	0.5	19847.305	-0.005	1.0
	3	1	2	3.5	2	0	2	2.5	19848.086	0.003	1.0
	3	1	2	2.5	2	0	2	1.5	19847.913	0.000	1.0

**Table A1**

**Continued**

	$N'$	$K_a'$	$K_c'$	$J'$	$N''$	$K_a''$	$K_c''$	$J''$	Obs.	Obs.-Calc.	Weight.
	4	1	3	4.5	3	0	3	3.5	19848.375	-0.002	1.0
	4	1	3	3.5	3	0	3	2.5	19848.232	-0.003	1.0
	5	1	4	5.5	4	0	4	4.5	19848.425	0.003	1.0
	$K_a' - K_a'' = 2-1$										
Q	2	2	0	2.5	2	1	2	2.5	19864.182	0.007	1.0
	2	2	1	2.5	2	1	1	2.5	19864.056	0.010	1.0
	4	2	2	3.5	4	1	4	3.5	19861.653	0.001	0.1
	4	2	3	4.5	4	1	3	4.5	19861.772	0.001	0.1
R	2	2	1	2.5	1	1	1	1.5	19866.797	-0.005	1.0
	2	2	0	2.5	1	1	0	1.5	19866.762	0.002	1.0
	2	2	0	1.5	1	1	0	0.5	19865.291	0.005	1.0
	3	2	2	3.5	2	1	2	2.5	19867.197	-0.005	1.0
	3	2	2	2.5	2	1	2	1.5	19866.406	0.003	1.0
	3	2	1	3.5	2	1	1	2.5	19867.072	-0.000	1.0
	3	2	1	2.5	2	1	1	1.5	19866.260	0.004	1.0
	4	2	3	4.5	3	1	3	3.5	19867.405	-0.013	1.0
	4	2	3	3.5	3	1	3	2.5	19866.831	-0.003	1.0