

$^{48}\text{Ti}^{37}\text{Cl}$ Assigned Transitions

Transitions are labeled using four columns, the excited state J value (J'), the ground state J value (J''), the observed transition wavenumber (Observed) and the fit residual multiplied by 10^3 (O-C).

${}^4\Gamma_{5/2} - X^4\Phi_{3/2} (0,0)$

J'	J''	Observed	O-C	J'	J''	Observed	O-C
3.5	2.5	23845.2305	0.5	11.5	12.5	23840.2735	-1.5
4.5	3.5	23845.5481	1.6	12.5	13.5	23839.9702	-2.0
5.5	4.5	23845.8655	1.8	13.5	14.5	23839.6637	-6.6
6.5	5.5	23846.1841	2.4	14.5	15.5	23839.3636	-5.6
7.5	6.5	23846.5014	0.9	15.5	16.5	23839.0680	-1.0
8.5	7.5	23846.8214	1.3	16.5	17.5	23838.7698	0.2
9.5	8.5	23847.1423	1.9	17.5	18.5	23838.4686	-2.5
10.5	9.5	23847.4634	1.8	18.5	19.5	23838.1711	-2.3
11.5	10.5	23847.7832	-0.3	19.5	20.5	23837.8747	-2.0
12.5	11.5	23848.1083	2.1	20.5	21.5	23837.5757	-5.1
13.5	12.5	23848.4329	3.2	21.5	22.5	23837.2803	-5.5
14.5	13.5	23848.7564	2.5	22.5	23.5	23836.9883	-3.4
15.5	14.5	23849.0782	-0.8	23.5	24.5	23836.6998	1.3
16.5	15.5	23849.4037	-1.1	24.5	25.5	23836.4045	-1.7
17.5	16.5	23849.7310	-0.5	25.5	26.5	23836.1137	-1.2
18.5	17.5	23850.0598	0.9	26.5	27.5	23835.8236	-0.9
19.5	18.5	23850.3860	-1.1	27.5	28.5	23835.5346	-0.4
20.5	19.5	23850.7154	-0.7	28.5	29.5	23835.2445	-2.0
21.5	20.5	23851.0469	0.9	29.5	30.5	23834.9591	0.2
22.5	21.5	23851.3761	-0.5	30.5	31.5	23834.6697	-2.6
23.5	22.5	23851.7053	-2.7	31.5	32.5	23834.3870	0.3
24.5	23.5	23852.0391	-1.1	32.5	33.5	23834.1028	0.8
25.5	24.5	23852.3714	-1.9	34.5	35.5	23833.5416	5.9
27.5	26.5	23853.0367	-5.2	35.5	36.5	23833.2535	-0.6
28.5	27.5	23853.3821	4.7	37.5	38.5	23832.6938	-0.2
30.5	29.5	23854.0506	-0.3	38.5	39.5	23832.4193	3.8
31.5	30.5	23854.3916	2.6	39.5	40.5	23832.1418	3.7
32.5	31.5	23854.7254	-2.5	40.5	41.5	23831.8662	4.5
33.5	32.5	23855.0665	-1.1	41.5	42.5	23831.5901	3.7
34.5	33.5	23855.4081	-0.1	42.5	43.5	23831.3153	3.0
35.5	34.5	23855.7457	-4.0	43.5	44.5	23831.0468	7.6
36.5	35.5	23856.0913	-0.7	44.5	45.5	23830.7748	7.5
37.5	36.5	23856.4339	-1.4	45.5	46.5	23830.5019	5.4
38.5	37.5	23856.7770	-2.4	46.5	47.5	23830.2335	6.6
39.5	38.5	23857.1273	2.9	47.5	48.5	23829.9598	1.4
40.5	39.5	23857.4715	1.2	48.5	49.5	23829.6901	-1.0
41.5	40.5	23857.8176	0.5	49.5	50.5	23829.4260	0.9
42.5	41.5	23858.1667	1.8	50.5	51.5	23829.1615	1.3
43.5	42.5	23858.5164	2.9	51.5	52.5	23828.8985	2.0
44.5	43.5	23858.8638	0.7	52.5	53.5	23828.6374	3.3
45.5	44.5	23859.2136	-0.1	53.5	54.5	23828.3733	0.3
46.5	45.5	23859.5654	0.2	54.5	55.5	23828.1140	0.9
47.5	46.5	23859.9105	-7.2	55.5	56.5	23827.8537	-0.8
4.5	5.5	23842.4177	0.2	56.5	57.5	23827.5938	-3.4
6.5	7.5	23841.8008	-0.5	57.5	58.5	23827.3386	-2.6
7.5	8.5	23841.4932	-1.2	58.5	59.5	23827.0842	-2.4
8.5	9.5	23841.1863	-2.0	59.5	60.5	23826.8297	-3.6

9.5	10.5	23840.8839	0.9	60.5	61.5	23826.5755	-5.9
10.5	11.5	23840.5799	1.3				

${}^4\Gamma_{5/2} - X^4\Phi_{5/2} (0,0)$

J'	J''	Observed	O-C	J'	J''	Observed	O-C
5.5	4.5	23735.2362	1.2	41.5	40.5	23746.4908	1.1
6.5	5.5	23735.5511	2.7	42.5	41.5	23746.8030	0.3
7.5	6.5	23735.8667	5.1	43.5	42.5	23747.1155	-0.3
8.5	7.5	23736.1774	2.6	44.5	43.5	23747.4280	-1.0
9.5	8.5	23736.4878	-0.2	45.5	44.5	23747.7436	1.2
10.5	9.5	23736.8016	0.6	46.5	45.5	23748.0559	0.0
11.5	10.5	23737.1138	-0.3	47.5	46.5	23748.3695	-0.1
12.5	11.5	23737.4271	0.1	48.5	47.5	23748.6795	-3.9
13.5	12.5	23737.7432	3.3	49.5	48.5	23748.9968	-0.7
14.5	13.5	23738.0534	0.7	6.5	7.5	23731.1582	2.1
15.5	14.5	23738.3668	1.4	7.5	8.5	23730.8425	0.6
16.5	15.5	23738.6788	0.7	8.5	9.5	23730.5309	3.1
17.5	16.5	23738.9936	2.8	9.5	10.5	23730.2139	0.3
18.5	17.5	23739.3031	-0.2	10.5	11.5	23729.9019	2.5
19.5	18.5	23739.6176	1.7	11.5	12.5	23729.5856	0.4
20.5	19.5	23739.9316	3.2	12.5	13.5	23729.2740	3.0
21.5	20.5	23740.2443	3.5	13.5	14.5	23728.9612	4.5
22.5	21.5	23740.5539	0.6	14.5	15.5	23728.6420	-0.5
23.5	22.5	23740.8643	-1.3	15.5	16.5	23728.3332	4.9
24.5	23.5	23741.1790	1.0	16.5	17.5	23728.0115	-2.5
25.5	24.5	23741.4886	-1.7	17.5	18.5	23727.6946	-5.3
26.5	25.5	23741.8056	3.0	18.5	19.5	23727.3808	-4.9
27.5	26.5	23742.1168	1.9	19.5	20.5	23727.0654	-6.2
28.5	27.5	23742.4268	-0.4	20.5	21.5	23726.7544	-3.1
29.5	28.5	23742.7381	-1.4	21.5	22.5	23726.4377	-5.7
30.5	29.5	23743.0542	2.4	22.5	23.5	23726.1241	-5.4
31.5	30.5	23743.3626	-1.6	23.5	24.5	23725.8127	-2.8
32.5	31.5	23743.6754	-1.1	24.5	25.5	23725.4980	-3.7
33.5	32.5	23743.9879	-1.0	25.5	26.5	23725.1839	-4.1
34.5	33.5	23744.3001	-1.2	26.5	27.5	23724.8700	-4.3
35.5	34.5	23744.6153	1.6	27.5	28.5	23724.5600	-0.8
36.5	35.5	23744.9267	0.5	28.5	29.5	23724.2470	-0.4
37.5	36.5	23745.2361	-2.6	29.5	30.5	23723.9337	-0.4
38.5	37.5	23745.5517	0.3	30.5	31.5	23723.6223	1.4
39.5	38.5	23745.8674	3.4	31.5	32.5	23723.3076	-0.3
40.5	39.5	23746.1762	-0.6				

${}^4\Gamma_{7/2} - X^4\Phi_{5/2} (0,0)$

J'	J''	Observed	O-C	J'	J''	Observed	O-C
3.5	2.5	23899.8568	6.0	28.5	27.5	23907.9506	0.6
4.5	3.5	23900.1725	5.1	29.5	28.5	23908.2801	-2.2
5.5	4.5	23900.4901	5.6	30.5	29.5	23908.6151	-0.1
6.5	5.5	23900.8063	4.0	3.5	4.5	23897.3460	5.2
7.5	6.5	23901.1251	4.5	4.5	5.5	23897.0334	3.5

8.5	7.5	23901.4419	2.3	5.5	6.5	23896.7241	4.5
9.5	8.5	23901.7613	2.1	6.5	7.5	23896.4143	4.4
10.5	9.5	23902.0791	-0.3	10.5	11.5	23895.1804	2.6
11.5	10.5	23902.4008	0.6	11.5	12.5	23894.8775	6.1
12.5	11.5	23902.7235	1.8	12.5	13.5	23894.5630	-2.7
13.5	12.5	23903.0427	-1.0	13.5	14.5	23894.2625	1.9
14.5	13.5	23903.3661	-0.3	14.5	15.5	23893.9562	0.0
15.5	14.5	23903.6880	-1.7	15.5	16.5	23893.6536	1.1
16.5	15.5	23904.0105	-3.1	16.5	17.5	23893.3488	-0.7
17.5	16.5	23904.3345	-3.6	17.5	18.5	23893.0454	-1.8
18.5	17.5	23904.6601	-3.2	18.5	19.5	23892.7451	-0.5
19.5	18.5	23904.9866	-2.5	19.5	20.5	23892.4428	-1.9
20.5	19.5	23905.3124	-3.1	20.5	21.5	23892.1428	-1.8
21.5	20.5	23905.6390	-3.5	21.5	22.5	23891.8477	2.6
22.5	21.5	23905.9652	-5.0	23.5	24.5	23891.2437	-4.8
23.5	22.5	23906.2929	-5.6	26.5	27.5	23890.3543	-4.8
24.5	23.5	23906.6209	-6.6	28.5	29.5	23889.7698	-0.3
25.5	24.5	23906.9544	-2.8	29.5	30.5	23889.4764	-0.4
26.5	25.5	23907.2832	-4.2	30.5	31.5	23889.1878	3.5
27.5	26.5	23907.6170	-1.4	31.5	32.5	23888.8945	1.9

${}^4\Gamma_{7/2} - X^4\Phi_{7/2} (0,0)$

J'	J''	Observed	O-C	J'	J''	Observed	O-C
4.5	3.5	23789.4707	5.2	36.5	35.5	23799.3924	8.5
5.5	4.5	23789.7882	9.4	37.5	36.5	23799.7003	9.2
6.5	5.5	23790.0991	7.2	38.5	37.5	23800.0076	9.4
7.5	6.5	23790.4061	1.4	39.5	38.5	23800.3213	16.1
8.5	7.5	23790.7217	4.4	40.5	39.5	23800.6307	18.6
9.5	8.5	23791.0301	0.4	42.5	41.5	23801.2511	25.3
10.5	9.5	23791.3404	-1.4	43.5	42.5	23801.5604	27.8
11.5	10.5	23791.6560	2.3	3.5	3.5	23788.0519	1.1
12.5	11.5	23791.9645	-0.9	5.5	6.5	23786.0075	3.8
13.5	12.5	23792.2705	-6.3	6.5	7.5	23785.6888	1.2
14.5	13.5	23792.5774	-10.6	7.5	8.5	23785.3717	0.3
15.5	14.5	23792.8908	-8.1	8.5	9.5	23785.0561	1.2
16.5	15.5	23793.2063	-3.4	9.5	10.5	23784.7381	-0.2
17.5	16.5	23793.5185	-1.7	10.5	11.5	23784.4253	3.8
18.5	17.5	23793.8278	-2.7	11.5	12.5	23784.1079	3.5
19.5	18.5	23794.1363	-4.3	12.5	13.5	23783.7876	0.4
20.5	19.5	23794.4431	-7.4	13.5	14.5	23783.4731	3.2
21.5	20.5	23794.7559	-4.2	14.5	15.5	23783.1526	0.3
22.5	21.5	23795.0683	-1.3	15.5	16.5	23782.8343	-0.3
23.5	22.5	23795.3760	-2.8	16.5	17.5	23782.5184	1.7
24.5	23.5	23795.6850	-2.9	17.5	18.5	23782.1953	-3.4
25.5	24.5	23795.9909	-5.9	18.5	19.5	23781.8799	-0.7
26.5	25.5	23796.3005	-5.0	19.5	20.5	23781.5604	-1.9
27.5	26.5	23796.6061	-7.9	20.5	21.5	23781.2431	-0.8
28.5	27.5	23796.9124	-10.0	21.5	22.5	23780.9226	-2.8
29.5	28.5	23797.2379	7.4	22.5	23.5	23780.6070	0.2

30.5	29.5	23797.5393	0.7	23.5	24.5	23780.2849	-3.2
31.5	30.5	23797.8478	1.3	24.5	25.5	23779.9667	-2.6
32.5	31.5	23798.1586	4.4	25.5	26.5	23779.6509	0.5
33.5	32.5	23798.4633	1.5	26.5	27.5	23779.3300	-1.5
34.5	33.5	23798.7764	7.1	27.5	28.5	23779.0087	-3.8
35.5	34.5	23799.0862	9.5	28.5	29.5	23778.6912	-2.3

$${}^4\Gamma_{5/2} - X^4\Phi_{3/2}(1,1)$$

J'	J''	Observed	O-C	J'	J''	Observed	O-C
4.5	3.5	23872.3653	-1.7	27.5	26.5	23879.9364	0.6
5.5	4.5	23872.6836	-0.9	29.5	28.5	23880.6191	-0.2
6.5	5.5	23873.0020	-1.0	30.5	29.5	23880.9630	0.6
7.5	6.5	23873.3221	-0.5	3.5	4.5	23869.5589	-0.7
8.5	7.5	23873.6416	-1.7	4.5	5.5	23869.2514	-1.8
9.5	8.5	23873.9608	-4.3	5.5	6.5	23868.9519	3.9
10.5	9.5	23874.2915	3.6	6.5	7.5	23868.6437	-0.1
11.5	10.5	23874.6137	1.8	7.5	8.5	23868.3404	-0.4
12.5	11.5	23874.9402	3.3	9.5	10.5	23867.7395	1.5
13.5	12.5	23875.2640	1.1	10.5	11.5	23867.4389	0.6
14.5	13.5	23875.5918	1.8	11.5	12.5	23867.1404	0.7
15.5	14.5	23875.9207	2.5	12.5	13.5	23866.8415	-0.8
16.5	15.5	23876.2464	-1.0	13.5	14.5	23866.5438	-2.1
17.5	16.5	23876.5772	-0.4	14.5	15.5	23866.2500	-0.7
18.5	17.5	23876.9086	-0.3	15.5	16.5	23865.9570	0.4
19.5	18.5	23877.2400	-1.2	16.5	17.5	23865.6648	1.2
20.5	19.5	23877.5744	-0.1	17.5	18.5	23865.3720	0.3
21.5	20.5	23877.9059	-3.0	18.5	19.5	23865.0800	-0.9
22.5	21.5	23878.2440	-0.2	19.5	20.5	23864.7933	2.1
24.5	23.5	23878.9190	1.1	20.5	21.5	23864.5006	-2.1
25.5	24.5	23879.2549	-1.3	24.5	25.5	23863.3597	0.3
26.5	25.5	23879.5957	0.2				