

Tables S1-S9 contain the quantum number assignments, observed transition frequencies (in MHz), and the residuals (obs. - calc., also in MHz) from the least squares fits. The angular momentum coupling schemes used for the several isotopomers are described in the paper. There are six “quantum labels” specified for each state in these tables, which follow the notation appropriate to the version of Pickett's SPFIT program released in 2007. The first three numbers, J , K_a , and K_c are the usual asymmetric top rotational quantum numbers. The fourth number, s , allows the inclusion of transitions with different levels of resolved hyperfine structure in a single fit as described below. The fifth and sixth numbers, nn_1 and nn_2 are aggregate quantum numbers used by the SPFIT program when there are not enough fields to input or output the complete set of quantum numbers arising from angular momentum coupling considerations.

For those isotopomers that do not include deuterium substitution, those transitions with resolved hyperfine structure arising from the nuclear quadrupole coupling interaction due to the Cl nucleus and the spin-rotation interaction due to the F atom are labeled with $s = 0$. If $s = 1$, the H-H spin-spin coupling interactions are also included. For the two species with a deuterium substitution, $s = 0$ labels transitions with resolved hyperfine splittings arising from nuclear quadrupole coupling interactions due to both Cl and D nuclei, those transitions that additionally show the effects of the spin-rotation interaction due to the F atom have $s = 1$.

Table S1: Observed Transition Frequencies (in MHz) for CH₂C³⁵ClF

J'	K_a'	K_c'	s'	m_1'	m_2'	J''	K_a''	K_c''	s''	m_1''	m_2''	Observed	Obs - Calc
1	1	0	0	1	1	1	0	1	0	1	0	7206.4749	-0.0005
1	1	0	0	1	1	1	0	1	0	1	1	7206.4791	-0.0001
1	1	0	0	1	0	1	0	1	0	1	1	7206.4870	0.0003
1	1	0	1	10	2	1	0	1	1	18	1	7221.9070	-0.0006
1	1	0	1	10	2	1	0	1	1	11	2	7221.9126	0.0013
1	1	0	1	14	1	1	0	1	1	15	1	7221.9126	0.0013
1	1	0	1	20	0	1	0	1	1	18	1	7221.9126	0.0015
1	1	0	1	9	2	1	0	1	1	17	1	7221.9145	-0.0007
1	1	0	1	7	2	1	0	1	1	15	1	7221.9197	0.0024
1	1	0	1	4	3	1	0	1	1	11	2	7221.9197	0.0017
1	1	0	1	12	1	1	0	1	1	12	1	7227.9329	-0.0037
1	1	0	1	3	3	1	0	1	1	3	3	7227.9407	0.0001
1	1	0	1	5	2	1	0	1	1	5	2	7227.9447	0.0006
1	1	0	1	0	4	1	0	1	1	0	4	7227.9470	0.0002
1	1	0	1	1	3	1	0	1	1	1	3	7227.9470	-0.0017
1	1	0	1	2	3	1	0	1	1	2	3	7227.9566	0.0025
1	1	0	0	2	2	1	0	1	0	3	3	7236.5110	-0.0041
1	1	0	0	2	1	1	0	1	0	3	2	7236.5110	-0.0049
1	1	0	1	17	1	1	0	1	1	9	2	7239.3140	0.0007
1	1	0	1	15	1	1	0	1	1	7	2	7239.3162	-0.0001
1	1	0	1	11	2	1	0	1	1	4	3	7239.3162	-0.0009
1	1	0	1	11	2	1	0	1	1	10	2	7239.3223	0.0023
1	1	0	1	21	0	1	0	1	1	13	1	7239.3223	0.0012
1	1	0	1	18	1	1	0	1	1	16	1	7239.3223	-0.0006
1	1	0	1	18	1	1	0	1	1	10	2	7239.3267	-0.0008
1	1	0	0	3	2	1	0	1	0	2	1	7246.1814	0.0039
1	1	0	0	3	3	1	0	1	0	2	2	7246.1907	0.0027
1	1	0	1	9	2	1	0	1	1	9	2	7254.7509	0.0017
1	1	0	1	10	2	1	0	1	1	10	2	7254.7509	-0.0012
1	1	0	1	7	2	1	0	1	1	7	2	7254.7550	0.0006
1	1	0	1	4	3	1	0	1	1	4	3	7254.7578	0.0018
5	2	3	0	6	5	5	2	4	0	6	5	8529.4923	0.0011
5	2	3	0	6	6	5	2	4	0	6	6	8529.4923	-0.0014
5	2	3	0	5	4	5	2	4	0	5	4	8530.0853	0.0001
5	2	3	0	5	5	5	2	4	0	5	5	8530.0853	-0.0024
5	2	3	0	7	6	5	2	4	0	7	6	8531.5929	0.0022
5	2	3	0	7	7	5	2	4	0	7	7	8531.5929	-0.0004
5	2	3	0	4	3	5	2	4	0	4	3	8532.1791	0.0002
5	2	3	0	4	4	5	2	4	0	4	4	8532.1791	-0.0024
1	0	1	0	2	1	0	0	0	0	2	1	8535.8723	0.0006
1	0	1	0	2	2	0	0	0	0	2	2	8535.8723	-0.0025
1	0	1	0	3	2	0	0	0	0	2	1	8554.1106	0.0033
1	0	1	0	3	3	0	0	0	0	2	2	8554.1174	0.0033

Table S1: Observed Transition Frequencies (in MHz) for CH₂C³⁵ClF

1	0	1	0	1	1	0	0	0	0	2	2	8568.7094	-0.0025
2	1	1	0	2	1	2	0	2	0	1	1	9185.7167	-0.0008
2	1	1	0	2	2	2	0	2	0	1	1	9185.7311	0.0008
2	1	1	0	3	2	2	0	2	0	4	3	9191.4363	-0.0058
2	1	1	0	3	3	2	0	2	0	4	4	9191.4363	-0.0081
2	1	1	0	1	0	2	0	2	0	1	1	9195.3946	0.0019
2	1	1	0	1	1	2	0	2	0	1	1	9195.4082	-0.0005
2	1	1	0	1	1	2	0	2	0	1	0	9195.4182	-0.0017
2	1	1	0	3	2	2	0	2	0	2	1	9196.4711	0.0019
2	1	1	0	3	3	2	0	2	0	2	2	9196.4777	0.0024
2	1	1	0	4	3	2	0	2	0	4	3	9201.1009	0.0004
2	1	1	0	4	4	2	0	2	0	4	4	9201.1045	-0.0015
2	1	1	0	2	1	2	0	2	0	2	1	9203.3757	-0.0012
2	1	1	0	2	2	2	0	2	0	2	2	9203.3802	-0.0006
2	1	1	0	3	2	2	0	2	0	3	2	9209.1030	-0.0008
2	1	1	0	3	3	2	0	2	0	3	3	9209.1077	-0.0007
2	1	1	0	1	0	2	0	2	0	2	1	9213.0498	-0.0023
2	1	1	0	1	1	2	0	2	0	2	2	9213.0571	-0.0021
2	1	1	0	1	1	2	0	2	0	2	1	9213.0679	-0.0002
2	1	1	0	2	1	2	0	2	0	3	2	9216.0090	-0.0025
2	1	1	0	2	2	2	0	2	0	3	3	9216.0090	-0.0048
2	1	1	0	4	3	2	0	2	0	3	2	9218.7673	0.0051
2	1	1	0	4	4	2	0	2	0	3	3	9218.7753	0.0053
3	1	2	0	4	3	3	1	3	0	5	4	9870.4895	-0.0045
3	1	2	0	4	4	3	1	3	0	5	5	9870.4895	-0.0070
3	1	2	0	3	2	3	1	3	0	2	1	9870.9653	0.0029
3	1	2	0	3	3	3	1	3	0	2	2	9870.9653	0.0006
3	1	2	0	4	3	3	1	3	0	3	2	9877.4077	0.0040
3	1	2	0	4	4	3	1	3	0	3	3	9877.4128	0.0042
3	1	2	0	4	3	3	1	3	0	4	3	9883.4678	0.0024
3	1	2	0	4	4	3	1	3	0	4	4	9883.4678	-0.0017
3	1	2	0	3	2	3	1	3	0	3	2	9883.9450	0.0025
3	1	2	0	3	3	3	1	3	0	3	3	9883.9450	-0.0014
3	1	2	0	5	4	3	1	3	0	5	4	9884.4990	0.0043
3	1	2	0	5	5	3	1	3	0	5	5	9884.4990	-0.0002
3	1	2	0	2	1	3	1	3	0	2	1	9884.9693	-0.0012
3	1	2	0	2	2	3	1	3	0	2	2	9884.9724	-0.0024
3	1	2	0	3	2	3	1	3	0	4	3	9890.0009	-0.0032
3	1	2	0	3	3	3	1	3	0	4	4	9890.0009	-0.0064
3	1	2	0	5	4	3	1	3	0	4	3	9897.4733	0.0072
3	1	2	0	5	5	3	1	3	0	4	4	9897.4800	0.0078
3	1	2	0	2	1	3	1	3	0	3	2	9897.9468	-0.0038
3	1	2	0	2	2	3	1	3	0	3	3	9897.9528	-0.0037
3	1	2	0	4	4	2	2	1	0	3	3	11150.6494	0.0039

Table S1: Observed Transition Frequencies (in MHz) for CH₂C³⁵ClF

3	1	2	0	4	3	2	2	1	0	3	2	11150.6494	0.0026
3	1	2	0	3	3	2	2	1	0	3	3	11157.1824	-0.0009
3	1	2	0	3	2	2	2	1	0	3	2	11157.1824	-0.0031
3	1	2	0	4	4	2	2	1	0	4	4	11168.8872	0.0014
3	1	2	0	4	3	2	2	1	0	4	3	11168.8925	0.0005
3	1	2	0	3	2	2	2	1	0	2	1	11170.2141	0.0022
3	1	2	0	3	3	2	2	1	0	2	2	11170.2141	0.0009
3	1	2	0	2	2	2	2	1	0	3	3	11171.1887	-0.0047
3	1	2	0	2	1	2	2	1	0	3	2	11171.1887	-0.0049
3	1	2	0	3	3	2	2	1	0	4	4	11175.4196	-0.0040
3	1	2	0	3	2	2	2	1	0	4	3	11175.4267	-0.0040
3	1	2	0	2	1	2	2	1	0	2	1	11184.2210	0.0010
3	1	2	0	2	2	2	2	1	0	2	2	11184.2210	-0.0023
3	1	2	0	2	2	2	2	1	0	1	1	11202.4678	-0.0012
3	1	2	0	2	1	2	2	1	0	1	0	11202.4707	0.0002
2	0	2	0	3	2	1	1	1	0	2	1	11184.7520	0.0020
2	0	2	0	3	3	1	1	1	0	2	2	11184.7567	0.0014
2	0	2	0	3	3	1	1	1	0	3	3	11194.4215	0.0005
2	0	2	0	3	2	1	1	1	0	3	2	11194.4215	-0.0009
2	0	2	0	2	1	1	1	1	0	2	1	11197.3862	0.0016
2	0	2	0	2	2	1	1	1	0	2	2	11197.3862	-0.0021
2	0	2	0	2	2	1	1	1	0	3	3	11207.0507	-0.0034
2	0	2	0	2	1	1	1	1	0	3	2	11207.0540	-0.0030
2	0	2	0	4	3	1	1	1	0	3	2	11212.0896	0.0055
2	0	2	0	4	4	1	1	1	0	3	3	11212.0896	0.0046
2	0	2	0	2	1	1	1	1	0	1	0	11214.7820	0.0010
2	0	2	0	2	1	1	1	1	0	1	1	11214.7907	0.0031
2	0	2	0	2	2	1	1	1	0	1	1	11214.7974	0.0008
2	0	2	0	1	0	1	1	1	0	2	1	11215.0306	-0.0023
2	0	2	0	1	1	1	1	1	0	2	2	11215.0350	-0.0038
2	0	2	0	1	0	1	1	1	0	1	1	11232.4356	-0.0003
2	0	2	0	1	1	1	1	1	0	1	0	11232.4395	-0.0009
2	0	2	0	1	1	1	1	1	0	1	1	11232.4459	-0.0012
3	1	2	0	3	2	3	0	3	0	2	1	12642.6583	0.0049
3	1	2	0	3	3	3	0	3	0	2	2	12642.6583	0.0015
3	1	2	0	4	3	3	0	3	0	5	4	12644.0171	-0.0060
3	1	2	0	4	4	3	0	3	0	5	5	12644.0171	-0.0096
3	1	2	0	4	3	3	0	3	0	3	2	12653.0658	0.0040
3	1	2	0	4	4	3	0	3	0	3	3	12653.0720	0.0043
3	1	2	0	2	1	3	0	3	0	2	1	12656.6613	-0.0002
3	1	2	0	2	2	3	0	3	0	2	2	12656.6666	-0.0003
3	1	2	0	5	4	3	0	3	0	5	4	12658.0260	0.0022
3	1	2	0	5	5	3	0	3	0	5	5	12658.0284	-0.0010
3	1	2	0	3	2	3	0	3	0	3	2	12659.6001	-0.0005

Table S1: Observed Transition Frequencies (in MHz) for CH₂C³⁵ClF

3	1	2	0	3	3	3	0	3	0	3	3	12659.6047	-0.0008
3	1	2	0	4	3	3	0	3	0	4	3	12660.9922	0.0005
3	1	2	0	4	4	3	0	3	0	4	4	12660.9958	-0.0011
3	1	2	0	3	2	3	0	3	0	4	3	12667.5281	-0.0024
3	1	2	0	3	3	3	0	3	0	4	4	12667.5281	-0.0066
3	1	2	0	2	1	3	0	3	0	3	2	12673.6047	-0.0040
3	1	2	0	2	2	3	0	3	0	3	3	12673.6119	-0.0037
3	1	2	0	5	4	3	0	3	0	4	3	12674.9995	0.0070
3	1	2	0	5	5	3	0	3	0	4	4	12675.0071	0.0075
1	1	1	0	1	1	0	0	0	0	2	2	14120.2803	-0.0025
1	1	1	0	3	2	0	0	0	0	2	1	14128.0151	0.0017
1	1	1	0	3	3	0	0	0	0	2	2	14128.0265	0.0012
1	1	1	0	2	1	0	0	0	0	2	1	14137.6909	0.0051
1	1	1	0	2	2	0	0	0	0	2	2	14137.6909	-0.0002
2	1	2	0	3	2	1	1	1	0	2	1	15433.2062	0.0002
2	1	2	0	3	3	1	1	1	0	2	2	15433.2142	0.0010
2	1	2	0	2	1	1	1	1	0	2	1	15439.3399	0.0033
2	1	2	0	2	2	1	1	1	0	2	2	15439.3399	-0.0020
2	1	2	0	3	2	1	1	1	0	3	2	15442.8781	-0.0002
2	1	2	0	3	3	1	1	1	0	3	3	15442.8781	-0.0009
2	1	2	0	1	0	1	1	1	0	2	1	15447.9109	-0.0032
2	1	2	0	1	1	1	1	1	0	2	2	15447.9177	-0.0044
2	1	2	0	2	2	1	1	1	0	3	3	15449.0046	-0.0031
2	1	2	0	2	1	1	1	1	0	3	2	15449.0046	-0.0044
2	1	2	0	4	3	1	1	1	0	3	2	15451.4425	0.0041
2	1	2	0	4	4	1	1	1	0	3	3	15451.4463	0.0046
2	1	2	0	2	1	1	1	1	0	1	0	15456.7339	0.0010
2	1	2	0	2	1	1	1	1	0	1	1	15456.7424	0.0028
2	1	2	0	2	2	1	1	1	0	1	1	15456.7506	0.0004
2	1	2	0	1	0	1	1	1	0	1	1	15465.3162	-0.0009
2	1	2	0	1	1	1	1	1	0	1	0	15465.3221	-0.0016
2	1	2	0	1	1	1	1	1	0	1	1	15465.3289	-0.0014
4	2	2	0	4	3	4	1	3	0	3	2	15821.4454	0.0041
4	2	2	0	4	4	4	1	3	0	3	3	15821.4493	0.0045
4	2	2	0	5	4	4	1	3	0	6	5	15823.7015	-0.0075
4	2	2	0	5	5	4	1	3	0	6	6	15823.7015	-0.0111
4	2	2	0	3	2	4	1	3	0	3	2	15830.4428	0.0003
4	2	2	0	3	3	4	1	3	0	3	3	15830.4487	0.0010
4	2	2	0	6	5	4	1	3	0	6	5	15832.6968	-0.0006
4	2	2	0	6	6	4	1	3	0	6	6	15832.7021	-0.0006
4	2	2	0	5	4	4	1	3	0	4	3	15833.7333	0.0061
4	2	2	0	5	5	4	1	3	0	4	4	15833.7393	0.0065
4	2	2	0	4	3	4	1	3	0	4	3	15836.8788	-0.0002
4	2	2	0	4	4	4	1	3	0	4	4	15836.8843	0.0003

Table S1: Observed Transition Frequencies (in MHz) for CH₂C³⁵ClF

4	2	2	0	5	4	4	1	3	0	5	4	15839.1429	-0.0005
4	2	2	0	5	5	4	1	3	0	5	5	15839.1483	-0.0002
4	2	2	0	4	3	4	1	3	0	5	4	15842.2885	-0.0067
4	2	2	0	4	4	4	1	3	0	5	5	15842.2927	-0.0069
4	2	2	0	3	2	4	1	3	0	4	3	15845.8764	-0.0038
4	2	2	0	3	3	4	1	3	0	4	4	15845.8833	-0.0037
4	2	2	0	6	5	4	1	3	0	5	4	15848.1407	0.0089
4	2	2	0	6	6	4	1	3	0	5	5	15848.1476	0.0090
3	2	1	0	3	2	3	1	2	0	2	1	15978.3919	0.0028
3	2	1	0	3	3	3	1	2	0	2	2	15978.3966	0.0034
3	2	1	0	2	1	3	1	2	0	2	1	15979.6809	-0.0001
3	2	1	0	2	2	3	1	2	0	2	2	15979.6884	0.0009
3	2	1	0	4	3	3	1	2	0	5	4	15984.3384	-0.0072
3	2	1	0	4	4	3	1	2	0	5	5	15984.3416	-0.0083
3	2	1	0	5	4	3	1	2	0	5	4	15985.6118	-0.0013
3	2	1	0	5	5	3	1	2	0	5	5	15985.6184	-0.0014
3	2	1	0	4	3	3	1	2	0	3	2	15991.8123	0.0047
3	2	1	0	4	4	3	1	2	0	3	3	15991.8198	0.0050
3	2	1	0	3	2	3	1	2	0	3	2	15992.3971	-0.0001
3	2	1	0	3	3	3	1	2	0	3	3	15992.4040	0.0007
3	2	1	0	2	1	3	1	2	0	3	2	15993.6869	-0.0021
3	2	1	0	2	2	3	1	2	0	3	3	15993.6956	-0.0020
3	2	1	0	4	3	3	1	2	0	4	3	15998.3459	-0.0005
3	2	1	0	4	4	3	1	2	0	4	4	15998.3524	-0.0002
3	2	1	0	3	2	3	1	2	0	4	3	15998.9314	-0.0045
3	2	1	0	3	3	3	1	2	0	4	4	15998.9366	-0.0045
3	2	1	0	5	4	3	1	2	0	4	3	15999.6201	0.0063
3	2	1	0	5	5	3	1	2	0	4	4	15999.6291	0.0065
4	1	3	0	5	4	4	1	4	0	6	5	16258.0045	-0.0061
4	1	3	0	5	5	4	1	4	0	6	6	16258.0045	-0.0104
4	1	3	0	4	3	4	1	4	0	3	2	16258.2982	0.0053
4	1	3	0	4	4	4	1	4	0	3	3	16258.2982	0.0011
4	1	3	0	5	4	4	1	4	0	4	3	16267.4968	0.0055
4	1	3	0	5	5	4	1	4	0	4	4	16267.5027	0.0055
4	1	3	0	5	4	4	1	4	0	5	4	16272.6218	0.0014
4	1	3	0	5	5	4	1	4	0	5	5	16272.6245	-0.0014
4	1	3	0	4	3	4	1	4	0	4	3	16272.9106	0.0031
4	1	3	0	4	4	4	1	4	0	4	4	16272.9106	-0.0023
4	1	3	0	6	5	4	1	4	0	6	5	16273.4482	0.0032
4	1	3	0	6	6	4	1	4	0	6	6	16273.4515	0.0007
4	1	3	0	3	2	4	1	4	0	3	2	16273.7328	0.0022
4	1	3	0	3	3	4	1	4	0	3	3	16273.7328	-0.0035
4	1	3	0	4	3	4	1	4	0	5	4	16278.0325	-0.0041
4	1	3	0	4	4	4	1	4	0	5	5	16278.0325	-0.0091

Table S1: Observed Transition Frequencies (in MHz) for CH₂C³⁵ClF

4	1	3	0	6	6	4	1	4	0	5	5	16288.0720	0.0102
4	1	3	0	3	2	4	1	4	0	4	3	16288.3469	0.0017
4	1	3	0	3	3	4	1	4	0	4	4	16288.3469	-0.0052
2	0	2	0	2	1	1	0	1	0	1	0	16766.3553	0.0005
2	0	2	0	2	2	1	0	1	0	1	1	16766.3687	0.0012
2	0	2	0	3	2	1	0	1	0	3	2	16768.3297	0.0012
2	0	2	0	3	3	1	0	1	0	3	3	16768.3297	-0.0025
2	0	2	0	2	1	1	0	1	0	3	2	16780.9594	-0.0038
2	0	2	0	2	2	1	0	1	0	3	3	16780.9594	-0.0059
2	0	2	0	1	0	1	0	1	0	1	1	16784.0066	-0.0003
2	0	2	0	1	1	1	0	1	0	1	0	16784.0133	-0.0009
2	0	2	0	1	1	1	0	1	0	1	1	16784.0171	-0.0009
2	0	2	0	4	3	1	0	1	0	3	2	16785.9935	0.0033
2	0	2	0	4	4	1	0	1	0	3	3	16786.0005	0.0043
2	0	2	0	3	2	1	0	1	0	2	1	16786.5673	0.0032
2	0	2	0	3	3	1	0	1	0	2	2	16786.5752	0.0036
2	0	2	0	2	1	1	0	1	0	2	1	16799.1988	0.0001
2	0	2	0	2	2	1	0	1	0	2	2	16799.2045	-0.0001
2	0	2	1	26	1	1	0	1	1	16	1	16816.8428	-0.0002
2	0	2	1	26	1	1	0	1	1	10	2	16816.8457	-0.0019
2	0	2	1	25	1	1	0	1	1	9	2	16816.8533	0.0012
2	0	2	1	23	1	1	0	1	1	7	2	16816.8533	-0.0018
2	0	2	1	19	2	1	0	1	1	4	3	16816.8533	-0.0026
2	2	0	0	1	0	2	1	1	0	1	1	17027.2988	0.0037
2	2	0	0	1	1	2	1	1	0	1	1	17027.3203	0.0006
2	2	0	0	1	1	2	1	1	0	1	0	17027.3345	-0.0012
2	2	0	0	1	0	2	1	1	0	2	1	17036.9855	-0.0008
2	2	0	0	1	1	2	1	1	0	2	2	17036.9976	-0.0006
2	2	0	0	2	1	2	1	1	0	1	0	17044.9700	0.0017
2	2	0	0	2	2	2	1	1	0	1	1	17044.9745	0.0025
2	2	0	1	12	2	2	1	1	1	12	2	17046.8412	-0.0014
2	2	0	1	3	4	2	1	1	1	3	4	17046.8443	-0.0004
2	2	0	1	6	3	2	1	1	1	6	3	17046.8443	-0.0019
2	2	0	1	0	5	2	1	1	1	0	5	17046.8532	-0.0012
2	2	0	1	1	4	2	1	1	1	1	4	17046.8532	-0.0029
2	2	0	0	2	1	2	1	1	0	2	1	17054.6433	-0.0003
2	2	0	0	2	2	2	1	1	0	2	2	17054.6519	0.0015
2	2	0	0	4	3	2	1	1	0	3	2	17056.5083	0.0037
2	2	0	0	4	4	2	1	1	0	3	3	17056.5204	0.0027
2	2	0	0	2	1	2	1	1	0	3	2	17061.5484	-0.0029
2	2	0	0	2	2	2	1	1	0	3	3	17061.5542	-0.0017
2	2	0	0	3	2	2	1	1	0	4	3	17064.5125	-0.0055
2	2	0	0	3	3	2	1	1	0	4	4	17064.5179	-0.0051
2	2	0	0	3	2	2	1	1	0	2	1	17067.2724	0.0037

Table S1: Observed Transition Frequencies (in MHz) for CH₂C³⁵ClF

2	2	0	0	3	3	2	1	1	0	2	2	17067.2828	0.0037
2	2	0	0	3	2	2	1	1	0	3	2	17074.1764	0.0000
2	2	0	0	3	3	2	1	1	0	3	3	17074.1854	0.0008
5	2	3	0	5	4	5	1	4	0	4	3	17156.6741	0.0081
5	2	3	0	5	5	5	1	4	0	4	4	17156.6741	0.0046
5	2	3	0	6	5	5	1	4	0	7	6	17157.5635	-0.0096
5	2	3	0	6	6	5	1	4	0	7	7	17157.5635	-0.0131
5	2	3	0	6	5	5	1	4	0	5	4	17168.9018	0.0078
5	2	3	0	6	6	5	1	4	0	5	5	17168.9068	0.0078
5	2	3	0	4	3	5	1	4	0	4	3	17169.3647	0.0001
5	2	3	0	4	4	5	1	4	0	4	4	17169.3693	-0.0001
5	2	3	0	7	6	5	1	4	0	7	6	17170.2652	0.0002
5	2	3	0	7	7	5	1	4	0	7	7	17170.2694	-0.0005
5	2	3	0	5	4	5	1	4	0	5	4	17172.4748	-0.0003
5	2	3	0	5	5	5	1	4	0	5	5	17172.4791	-0.0006
5	2	3	0	6	5	5	1	4	0	6	5	17173.3282	-0.0005
5	2	3	0	6	6	5	1	4	0	6	6	17173.3324	-0.0010
5	2	3	0	5	4	5	1	4	0	6	5	17176.9008	-0.0089
5	2	3	0	5	5	5	1	4	0	6	6	17176.9043	-0.0097
5	2	3	0	4	3	5	1	4	0	5	4	17185.1674	-0.0063
5	2	3	0	4	4	5	1	4	0	5	5	17185.1741	-0.0055
5	2	3	0	7	6	5	1	4	0	6	5	17186.0308	0.0102
5	2	3	0	7	7	5	1	4	0	6	6	17186.0376	0.0110
5	2	3	0	6	6	4	3	2	0	5	5	17575.5523	0.0048
5	2	3	0	6	5	4	3	2	0	5	4	17575.5523	0.0014
5	2	3	0	5	5	4	3	2	0	5	5	17579.1245	-0.0036
5	2	3	0	5	4	4	3	2	0	5	4	17579.1245	-0.0074
5	2	3	0	5	5	4	3	2	0	4	4	17581.2861	0.0022
5	2	3	0	5	4	4	3	2	0	4	3	17581.2861	-0.0008
5	2	3	0	4	4	4	3	2	0	4	4	17593.9799	-0.0039
5	2	3	0	4	3	4	3	2	0	4	3	17593.9799	-0.0056
5	2	3	0	7	7	4	3	2	0	6	6	17594.3182	0.0099
5	2	3	0	7	6	4	3	2	0	6	5	17594.3182	0.0055
5	2	3	0	4	4	4	3	2	0	3	3	17599.9808	0.0015
5	2	3	0	4	3	4	3	2	0	3	2	17599.9808	-0.0025
4	1	3	0	4	3	4	0	4	0	3	2	17836.7332	0.0056
4	1	3	0	4	4	4	0	4	0	3	3	17836.7332	0.0009
4	1	3	0	5	4	4	0	4	0	6	5	17837.0682	-0.0066
4	1	3	0	5	5	4	0	4	0	6	6	17837.0682	-0.0113
4	1	3	0	5	4	4	0	4	0	4	3	17847.7192	0.0054
4	1	3	0	5	5	4	0	4	0	4	4	17847.7257	0.0055
4	1	3	0	3	2	4	0	4	0	3	2	17852.1651	-0.0002
4	1	3	0	3	3	4	0	4	0	3	3	17852.1689	-0.0026
4	1	3	1	3	6	4	0	4	1	3	6	17852.5043	-0.0036

Table S1: Observed Transition Frequencies (in MHz) for CH₂C³⁵ClF

4	1	3	1	6	5	4	0	4	1	6	5	17852.5043	-0.0049
4	1	3	1	0	7	4	0	4	1	0	7	17852.5117	-0.0024
4	1	3	1	1	6	4	0	4	1	1	6	17852.5117	-0.0037
4	1	3	1	2	6	4	0	4	1	2	6	17852.5154	-0.0034
4	1	3	0	4	3	4	0	4	0	4	3	17853.1295	-0.0005
4	1	3	0	4	4	4	0	4	0	4	4	17853.1342	-0.0017
4	1	3	0	5	4	4	0	4	0	5	4	17853.4692	0.0007
4	1	3	0	5	5	4	0	4	0	5	5	17853.4727	-0.0018
4	1	3	0	4	3	4	0	4	0	5	4	17858.8808	-0.0039
4	1	3	0	4	4	4	0	4	0	5	5	17858.8808	-0.0093
4	1	3	0	3	2	4	0	4	0	4	3	17868.5621	-0.0057
4	1	3	0	3	3	4	0	4	0	4	4	17868.5694	-0.0057
4	1	3	0	6	5	4	0	4	0	5	4	17868.9114	0.0085
4	1	3	0	6	6	4	0	4	0	5	5	17868.9193	0.0090
2	1	1	0	3	2	1	1	0	0	2	1	18740.9189	0.0025
2	1	1	0	3	3	1	1	0	0	2	2	18740.9271	0.0016
2	1	1	0	2	1	1	1	0	0	2	1	18747.8241	-0.0001
2	1	1	0	2	2	1	1	0	0	2	2	18747.8291	-0.0019
2	1	1	0	3	2	1	1	0	0	3	2	18749.4905	0.0001
2	1	1	0	3	3	1	1	0	0	3	3	18749.4905	-0.0014
2	1	1	0	2	2	1	1	0	0	3	3	18756.3933	-0.0041
2	1	1	0	2	1	1	1	0	0	3	2	18756.3933	-0.0048
2	1	1	0	1	0	1	1	0	0	2	1	18757.4971	-0.0023
2	1	1	0	1	1	1	1	0	0	2	2	18757.5059	-0.0035
2	1	1	0	4	3	1	1	0	0	3	2	18759.1530	0.0042
2	1	1	0	4	4	1	1	0	0	3	3	18759.1589	0.0054
2	1	1	0	2	1	1	1	0	0	1	0	18763.2511	0.0023
2	1	1	0	2	1	1	1	0	0	1	1	18763.2567	0.0004
2	1	1	0	2	2	1	1	0	0	1	1	18763.2690	-0.0001
2	1	1	0	1	0	1	1	0	0	1	1	18772.9308	-0.0007
2	1	1	0	1	1	1	1	0	0	1	0	18772.9380	-0.0020
2	1	1	0	1	1	1	1	0	0	1	1	18772.9461	-0.0014
3	0	3	0	4	3	2	1	2	0	4	3	20200.0480	0.0003
3	0	3	0	4	4	2	1	2	0	4	4	20200.0480	-0.0012
3	0	3	0	3	2	2	1	2	0	4	3	20207.9732	-0.0045
3	0	3	0	3	3	2	1	2	0	4	4	20207.9732	-0.0052
3	0	3	0	4	3	2	1	2	0	3	2	20208.6121	0.0043
3	0	3	0	4	4	2	1	2	0	3	3	20208.6166	0.0047
3	0	3	0	3	2	2	1	2	0	2	1	20210.4092	0.0021
3	0	3	0	3	3	2	1	2	0	2	2	20210.4153	0.0029
3	0	3	0	3	2	2	1	2	0	3	2	20216.5395	0.0018
3	0	3	0	3	3	2	1	2	0	3	3	20216.5395	-0.0016
3	0	3	0	5	4	2	1	2	0	4	3	20217.0250	0.0086
3	0	3	0	5	5	2	1	2	0	4	4	20217.0250	0.0056

Table S1: Observed Transition Frequencies (in MHz) for CH₂C³⁵ClF

3	0	3	0	2	2	2	1	2	0	1	1	20218.7819	0.0010
3	0	3	0	2	1	2	1	2	0	2	1	20227.3526	-0.0017
3	0	3	0	2	2	2	1	2	0	2	2	20227.3603	-0.0008
3	0	3	0	2	1	2	1	2	0	3	2	20233.4811	-0.0038
3	0	3	0	2	2	2	1	2	0	3	3	20233.4856	-0.0042
2	1	2	0	2	1	1	0	1	0	1	0	21008.3073	0.0006
2	1	2	0	2	1	1	0	1	0	1	1	21008.3144	0.0039
2	1	2	0	2	2	1	0	1	0	1	1	21008.3221	0.0010
2	1	2	0	3	2	1	0	1	0	3	2	21016.7830	-0.0015
2	1	2	0	3	3	1	0	1	0	3	3	21016.7879	-0.0023
2	1	2	0	1	0	1	0	1	0	1	1	21016.8872	-0.0008
2	1	2	0	1	1	1	0	1	0	1	1	21016.8999	-0.0014
2	1	2	0	2	1	1	0	1	0	3	2	21022.9125	-0.0026
2	1	2	0	2	2	1	0	1	0	3	3	21022.9125	-0.0064
2	1	2	0	4	3	1	0	1	0	3	2	21025.3463	0.0018
2	1	2	0	4	4	1	0	1	0	3	3	21025.3553	0.0024
2	1	2	0	3	2	1	0	1	0	2	1	21035.0227	0.0027
2	1	2	0	3	3	1	0	1	0	2	2	21035.0328	0.0033
2	1	2	0	2	1	1	0	1	0	2	1	21041.1497	-0.0010
2	1	2	0	2	2	1	0	1	0	2	2	21041.1580	-0.0003
2	1	2	1	26	1	1	0	1	1	16	1	21049.7240	-0.0002
2	1	2	1	26	1	1	0	1	1	10	2	21049.7266	-0.0022
2	1	2	1	23	1	1	0	1	1	7	2	21049.7362	-0.0022
2	1	2	1	19	2	1	0	1	1	4	3	21049.7362	-0.0030
2	2	1	0	1	0	2	1	2	0	1	1	21672.9581	0.0036
2	2	1	0	1	1	2	1	2	0	1	1	21672.9792	0.0003
2	2	1	0	1	1	2	1	2	0	1	0	21672.9915	-0.0007
2	2	1	0	1	0	2	1	2	0	2	1	21681.5428	-0.0024
2	2	1	0	1	1	2	1	2	0	2	2	21681.5576	-0.0014
2	2	1	0	1	1	2	1	2	0	2	1	21681.5657	-0.0040
2	2	1	0	2	1	2	1	2	0	1	0	21691.2183	0.0000
2	2	1	0	2	2	2	1	2	0	1	1	21691.2261	0.0016
2	2	1	1	3	4	2	1	2	1	3	4	21692.1448	-0.0003
2	2	1	1	6	3	2	1	2	1	6	3	21692.1448	-0.0027
2	2	1	1	0	5	2	1	2	1	0	5	21692.1577	0.0001
2	2	1	1	1	4	2	1	2	1	1	4	21692.1577	-0.0026
2	2	1	1	2	4	2	1	2	1	2	4	21692.1681	0.0004
2	2	1	0	2	1	2	1	2	0	2	1	21699.7942	-0.0016
2	2	1	0	2	2	2	1	2	0	2	2	21699.8045	-0.0002
2	2	1	0	4	3	2	1	2	0	3	2	21700.7101	0.0025
2	2	1	0	4	4	2	1	2	0	3	3	21700.7256	0.0026
2	2	1	0	2	1	2	1	2	0	3	2	21705.9221	-0.0043
2	2	1	0	2	2	2	1	2	0	3	3	21705.9304	-0.0030
2	2	1	0	3	2	2	1	2	0	4	3	21710.3882	-0.0045

Table S1: Observed Transition Frequencies (in MHz) for CH₂C³⁵ClF

2	2	1	0	3	3	2	1	2	0	4	4	21710.3964	-0.0042
2	2	1	0	3	2	2	1	2	0	2	1	21712.8249	0.0027
2	2	1	0	3	3	2	1	2	0	2	2	21712.8377	0.0031
2	2	1	0	3	2	2	1	2	0	3	2	21718.9520	-0.0008
2	2	1	0	3	3	2	1	2	0	3	3	21718.9631	-0.0002

Table S2: Observed Transition Frequencies (in MHz) for CH₂¹³C³⁵ClF

J'	K_a'	K_c'	s'	m_1'	m_2'	J''	K_a''	K_c''	s''	m_1''	m_2''	Observed	Obs - Calc
1	1	0	0	1	1	1	0	1	0	1	0	7209.5926	-0.0003
1	1	0	0	1	1	1	0	1	0	1	1	7209.5968	0.0001
1	1	0	0	1	0	1	0	1	0	1	1	7209.6061	0.0006
1	1	0	0	2	2	1	0	1	0	1	1	7225.0419	0.0042
1	1	0	0	3	2	1	0	1	0	3	2	7231.0626	-0.0022
1	1	0	0	3	3	1	0	1	0	3	3	7231.0697	-0.0039
1	1	0	0	2	2	1	0	1	0	3	3	7239.6361	-0.0046
1	1	0	0	2	1	1	0	1	0	3	2	7239.6361	-0.0045
1	1	0	0	1	1	1	0	1	0	2	2	7242.4442	-0.0014
1	1	0	0	3	2	1	0	1	0	2	1	7249.3150	0.0082
1	1	0	0	3	3	1	0	1	0	2	2	7249.3219	0.0025
1	1	0	0	2	1	1	0	1	0	2	1	7257.8822	-0.0005
1	1	0	0	2	2	1	0	1	0	2	2	7257.8877	0.0012
1	0	1	0	2	1	0	0	0	0	2	1	8519.1128	0.0016
1	0	1	0	2	2	0	0	0	0	2	2	8519.1128	-0.0015
1	0	1	0	3	3	0	0	0	0	2	2	8537.3641	0.0040
1	0	1	0	1	1	0	0	0	0	2	2	8551.9614	-0.0017
2	1	1	0	2	2	2	0	2	0	1	1	9180.4023	0.0014
2	1	1	0	3	2	2	0	2	0	4	3	9186.1111	-0.0040
2	1	1	0	3	3	2	0	2	0	4	4	9186.1111	-0.0076
2	1	1	0	1	1	2	0	2	0	1	1	9190.0841	-0.0005
2	1	1	0	1	1	2	0	2	0	1	0	9190.0964	0.0005
2	1	1	0	3	3	2	0	2	0	2	2	9191.1553	0.0027
2	1	1	0	4	3	2	0	2	0	4	3	9195.7765	-0.0021
2	1	1	0	4	4	2	0	2	0	4	4	9195.7837	-0.0021
2	1	1	0	3	2	2	0	2	0	3	2	9203.7919	0.0048
2	1	1	0	3	3	2	0	2	0	3	3	9203.7919	-0.0011
2	1	1	0	1	0	2	0	2	0	2	1	9207.7344	-0.0024
2	1	1	0	1	1	2	0	2	0	2	2	9207.7428	-0.0025
2	1	1	0	2	1	2	0	2	0	3	2	9210.6971	-0.0016
2	1	1	0	2	2	2	0	2	0	3	3	9210.6971	-0.0050
2	1	1	0	4	3	2	0	2	0	3	2	9213.4605	0.0099
2	1	1	0	4	4	2	0	2	0	3	3	9213.4647	0.0047
3	1	2	0	4	3	3	1	3	0	4	3	9848.4289	0.0027
3	1	2	0	4	4	3	1	3	0	4	4	9848.4289	-0.0026
3	1	2	0	3	2	3	1	3	0	3	2	9848.9089	0.0033
3	1	2	0	3	3	3	1	3	0	3	3	9848.9089	-0.0017
3	1	2	0	5	4	3	1	3	0	5	4	9849.4570	-0.0034
3	1	2	0	5	5	3	1	3	0	5	5	9849.4686	0.0025
3	1	2	0	2	1	3	1	3	0	2	1	9849.9408	0.0024
3	1	2	0	2	2	3	1	3	0	2	2	9849.9408	-0.0031
3	1	2	0	4	4	2	2	1	0	3	3	11066.2394	0.0036
3	1	2	0	4	3	2	2	1	0	3	2	11066.2394	-0.0001

Table S2: Observed Transition Frequencies (in MHz) for CH₂¹³C³⁵ClF

3	1	2	0	3	3	2	2	1	0	2	2	11085.8124	-0.0006
3	1	2	0	3	2	2	2	1	0	2	1	11085.8124	-0.0012
3	1	2	0	5	5	2	2	1	0	4	4	11098.4984	0.0046
3	1	2	0	5	4	2	2	1	0	4	3	11098.5067	0.0056
3	1	2	0	2	2	2	2	1	0	1	1	11118.0787	-0.0048
2	0	2	0	3	2	1	1	1	0	2	1	11144.7097	0.0015
2	0	2	0	3	3	1	1	1	0	2	2	11144.7152	0.0024
2	0	2	0	3	3	1	1	1	0	3	3	11154.3827	-0.0007
2	0	2	0	3	2	1	1	1	0	3	2	11154.3867	0.0003
2	0	2	0	2	1	1	1	1	0	2	1	11157.3521	0.0019
2	0	2	0	2	2	1	1	1	0	2	2	11157.3521	-0.0011
2	0	2	0	2	2	1	1	1	0	3	3	11167.0193	-0.0045
2	0	2	0	2	1	1	1	1	0	3	2	11167.0242	-0.0042
2	0	2	0	4	4	1	1	1	0	3	3	11172.0646	0.0069
2	0	2	0	4	3	1	1	1	0	3	2	11172.0646	0.0062
2	0	2	0	2	1	1	1	1	0	1	0	11174.7553	0.0004
2	0	2	0	2	2	1	1	1	0	1	1	11174.7733	0.0018
2	0	2	0	1	0	1	1	1	0	2	1	11175.0048	-0.0039
2	0	2	0	1	1	1	1	1	0	2	2	11175.0106	-0.0034
2	0	2	0	1	0	1	1	1	0	1	1	11192.4204	-0.0006
2	0	2	0	1	1	1	1	1	0	1	0	11192.4237	-0.0010
2	0	2	0	1	1	1	1	1	0	1	1	11192.4315	-0.0008
3	1	2	0	3	2	3	0	3	0	2	1	12621.3368	0.0058
3	1	2	0	3	3	3	0	3	0	2	2	12621.3368	0.0010
3	1	2	0	4	3	3	0	3	0	5	4	12622.6989	-0.0046
3	1	2	0	4	4	3	0	3	0	5	5	12622.6989	-0.0097
3	1	2	0	4	4	3	0	3	0	3	3	12631.7596	0.0030
3	1	2	0	2	1	3	0	3	0	2	1	12635.3522	0.0047
3	1	2	0	2	2	3	0	3	0	2	2	12635.3522	-0.0023
3	1	2	0	5	4	3	0	3	0	5	4	12636.7177	0.0049
3	1	2	0	5	5	3	0	3	0	5	5	12636.7177	-0.0024
3	1	2	0	3	2	3	0	3	0	3	2	12638.2956	0.0035
3	1	2	0	3	3	3	0	3	0	3	3	12638.2956	-0.0028
3	1	2	0	4	4	3	0	3	0	4	4	12639.6893	-0.0027
3	1	2	0	3	2	3	0	3	0	4	3	12646.2254	-0.0028
3	1	2	0	3	3	3	0	3	0	4	4	12646.2254	-0.0084
3	1	2	0	2	2	3	0	3	0	3	3	12652.3120	-0.0052
3	1	2	0	5	5	3	0	3	0	4	4	12653.7088	0.0053
1	1	1	0	1	1	0	0	0	0	2	2	14112.5667	-0.0018
1	1	1	0	1	0	0	0	0	0	2	1	14112.5724	-0.0037
1	1	1	0	2	1	0	0	0	0	2	1	14129.9745	-0.0063
1	1	1	0	2	2	0	0	0	0	2	2	14129.9858	-0.0011
2	1	2	0	3	2	1	1	1	0	2	1	15405.6118	-0.0008
2	1	2	0	3	3	1	1	1	0	2	2	15405.6216	0.0018

Table S2: Observed Transition Frequencies (in MHz) for CH₂¹³C³⁵ClF

2	1	2	0	2	2	1	1	1	0	2	2	15411.7476	-0.0018
2	1	2	0	3	3	1	1	1	0	3	3	15415.2900	-0.0005
2	1	2	0	3	2	1	1	1	0	3	2	15415.2900	-0.0008
2	1	2	0	1	1	1	1	1	0	2	2	15420.3272	-0.0036
2	1	2	0	2	2	1	1	1	0	3	3	15421.4174	-0.0026
2	1	2	0	2	1	1	1	1	0	3	2	15421.4174	-0.0049
2	1	2	0	4	3	1	1	1	0	3	2	15423.8559	0.0039
2	1	2	0	4	4	1	1	1	0	3	3	15423.8588	0.0043
2	1	2	0	2	1	1	1	1	0	1	0	15429.1489	0.0001
2	1	2	0	2	2	1	1	1	0	1	1	15429.1685	0.0008
2	1	2	0	1	0	1	1	1	0	1	1	15437.7330	-0.0019
2	1	2	0	1	1	1	1	1	0	1	1	15437.7478	-0.0013
4	2	2	0	6	5	4	1	3	0	6	5	15844.8464	0.0025
4	2	2	0	6	6	4	1	3	0	6	6	15844.8464	-0.0045
4	2	2	0	4	4	4	1	3	0	4	4	15849.0408	-0.0017
4	2	2	0	5	4	4	1	3	0	5	4	15851.3074	0.0013
4	2	2	0	5	5	4	1	3	0	5	5	15851.3133	0.0006
3	2	1	0	2	1	3	1	2	0	2	1	16002.2939	0.0016
3	2	1	0	2	2	3	1	2	0	2	2	16002.3017	0.0008
3	2	1	0	5	4	3	1	2	0	5	4	16008.2311	-0.0008
3	2	1	0	5	5	3	1	2	0	5	5	16008.2392	-0.0015
3	2	1	0	3	2	3	1	2	0	3	2	16015.0245	0.0002
3	2	1	0	3	3	3	1	2	0	3	3	16015.0330	0.0006
3	2	1	0	4	3	3	1	2	0	4	3	16020.9805	-0.0003
3	2	1	0	4	4	3	1	2	0	4	4	16020.9884	-0.0007
2	0	2	0	2	1	1	0	1	0	1	0	16735.3644	0.0003
2	0	2	0	2	2	1	0	1	0	1	1	16735.3787	0.0017
2	0	2	0	3	2	1	0	1	0	3	2	16737.3372	0.0014
2	0	2	0	3	3	1	0	1	0	3	3	16737.3372	-0.0023
2	0	2	0	2	1	1	0	1	0	3	2	16749.9736	-0.0042
2	0	2	0	2	2	1	0	1	0	3	3	16749.9736	-0.0063
2	0	2	0	1	0	1	0	1	0	1	1	16753.0260	-0.0004
2	0	2	0	1	1	1	0	1	0	1	1	16753.0363	-0.0014
2	0	2	0	4	3	1	0	1	0	3	2	16755.0112	0.0035
2	0	2	0	4	4	1	0	1	0	3	3	16755.0181	0.0044
2	0	2	0	3	2	1	0	1	0	2	1	16755.5829	0.0051
2	0	2	0	3	3	1	0	1	0	2	2	16755.5890	0.0036
2	2	0	0	1	0	2	1	1	0	1	1	17051.8960	0.0044
2	2	0	0	1	1	2	1	1	0	1	1	17051.9204	-0.0001
2	2	0	0	2	2	2	1	1	0	1	1	17069.5833	0.0000
2	2	0	0	4	3	2	1	1	0	4	3	17071.4526	-0.0031
2	2	0	0	4	4	2	1	1	0	4	4	17071.4683	-0.0004
2	2	0	0	4	3	2	1	1	0	3	2	17081.1224	0.0031
2	2	0	0	4	4	2	1	1	0	3	3	17081.1395	0.0037

Table S2: Observed Transition Frequencies (in MHz) for CH₂¹³C³⁵ClF

2	2	0	0	2	1	2	1	1	0	3	2	17086.1650	-0.0045
2	2	0	0	2	2	2	1	1	0	3	3	17086.1730	-0.0030
2	2	0	0	3	2	2	1	1	0	2	1	17091.8949	0.0047
2	2	0	0	3	3	2	1	1	0	2	2	17091.9071	0.0037
2	2	0	0	3	2	2	1	1	0	3	2	17098.8002	-0.0016
2	2	0	0	3	3	2	1	1	0	3	3	17098.8125	0.0000
2	1	1	0	3	3	1	1	0	0	2	2	18701.4932	0.0014
2	1	1	0	2	2	1	1	0	0	2	2	18708.3983	-0.0026
2	1	1	0	3	2	1	1	0	0	3	2	18710.0579	-0.0002
2	1	1	0	3	3	1	1	0	0	3	3	18710.0579	-0.0010
2	1	1	0	4	3	1	1	0	0	3	2	18719.7309	0.0093
2	1	1	0	4	4	1	1	0	0	3	3	18719.7309	0.0049
2	1	1	0	2	2	1	1	0	0	1	1	18723.8436	0.0017
2	1	1	0	1	1	1	1	0	0	1	1	18733.5256	0.0000
3	0	3	0	4	3	2	1	2	0	4	3	20146.3240	-0.0040
3	0	3	0	4	4	2	1	2	0	4	4	20146.3240	-0.0046
3	0	3	0	4	3	2	1	2	0	3	2	20154.8926	0.0035
3	0	3	0	4	4	2	1	2	0	3	3	20154.8926	0.0000
3	0	3	0	3	2	2	1	2	0	2	1	20156.6922	-0.0015
3	0	3	0	3	3	2	1	2	0	2	2	20156.6979	-0.0005
3	0	3	0	5	4	2	1	2	0	4	3	20163.3146	0.0048
3	0	3	0	5	5	2	1	2	0	4	4	20163.3146	0.0026
3	0	3	0	2	2	2	1	2	0	1	1	20165.0769	-0.0029
3	0	3	0	2	2	2	1	2	0	2	2	20173.6566	-0.0045
2	1	2	0	2	1	1	0	1	0	1	0	20989.7570	-0.0010

Table S3: Observed Transition Frequencies (in MHz) for $^{13}\text{CH}_2\text{C}^{35}\text{ClF}$

J'	K_a'	K_c'	s'	m_1'	m_2'	J''	K_a''	K_c''	s''	m_1''	m_2''	Observed	Obs - Calc
1	1	0	0	1	1	1	0	1	0	1	0	6950.6801	-0.0012
1	1	0	0	1	1	1	0	1	0	1	1	6950.6845	-0.0009
1	1	0	0	1	0	1	0	1	0	1	1	6950.6938	-0.0002
1	1	0	0	2	1	1	0	1	0	1	0	6966.1128	0.0006
1	1	0	0	2	2	1	0	1	0	1	1	6966.1250	0.0019
1	1	0	1	3	3	1	0	1	1	3	3	6972.2003	0.0005
1	1	0	1	6	2	1	0	1	1	6	2	6972.2003	-0.0008
1	1	0	1	0	4	1	0	1	1	0	4	6972.2064	-0.0010
1	1	0	1	1	3	1	0	1	1	1	3	6972.2064	-0.0028
1	1	0	0	2	2	1	0	1	0	3	3	6980.7705	-0.0040
1	1	0	0	2	1	1	0	1	0	3	2	6980.7705	-0.0044
1	1	0	0	1	1	1	0	1	0	2	2	6983.6425	-0.0007
1	1	0	0	1	0	1	0	1	0	2	1	6983.6533	-0.0017
1	1	0	1	8	2	1	0	1	1	16	1	6990.5075	0.0055
1	1	0	1	3	3	1	0	1	1	10	2	6990.5075	0.0042
1	1	0	1	6	2	1	0	1	1	14	1	6990.5075	0.0040
1	1	0	1	2	3	1	0	1	1	9	2	6990.5165	0.0009
1	1	0	1	0	4	1	0	1	1	4	3	6990.5165	0.0010
1	1	0	1	1	3	1	0	1	1	7	2	6990.5165	0.0008
1	1	0	1	5	2	1	0	1	1	13	1	6990.5201	0.0019
1	0	1	0	3	3	0	0	0	0	2	2	8412.6309	0.0052
1	0	1	0	1	1	0	0	0	0	2	2	8427.2748	-0.0023
2	1	1	0	2	2	2	0	2	0	1	1	8934.0965	0.0013
2	1	1	0	3	2	2	0	2	0	4	3	8939.7680	-0.0042
2	1	1	0	3	3	2	0	2	0	4	4	8939.7680	-0.0070
2	1	1	0	1	1	2	0	2	0	1	1	8943.8407	-0.0009
2	1	1	0	1	1	2	0	2	0	1	0	8943.8525	-0.0011
2	1	1	0	3	2	2	0	2	0	2	1	8944.8086	0.0043
2	1	1	0	3	3	2	0	2	0	2	2	8944.8149	0.0037
2	1	1	1	3	4	2	0	2	1	3	4	8949.4967	-0.0001
2	1	1	1	6	3	2	0	2	1	6	3	8949.4967	-0.0013
2	1	1	1	0	5	2	0	2	1	0	5	8949.5036	0.0007
2	1	1	1	1	4	2	0	2	1	1	4	8949.5036	-0.0007
2	1	1	1	2	4	2	0	2	1	2	4	8949.5080	-0.0001
2	1	1	0	2	1	2	0	2	0	2	1	8951.7600	-0.0004
2	1	1	0	2	2	2	0	2	0	2	2	8951.7644	-0.0004
2	1	1	0	3	2	2	0	2	0	3	2	8957.4544	0.0010
2	1	1	0	3	3	2	0	2	0	3	3	8957.4585	-0.0001
2	1	1	0	1	0	2	0	2	0	2	1	8961.5009	-0.0023
2	1	1	0	1	1	2	0	2	0	2	2	8961.5085	-0.0027
2	1	1	0	2	1	2	0	2	0	3	2	8964.4072	-0.0023
2	1	1	0	2	2	2	0	2	0	3	3	8964.4072	-0.0050
2	1	1	0	4	3	2	0	2	0	3	2	8967.1851	0.0060

Table S3: Observed Transition Frequencies (in MHz) for $^{13}\text{CH}_2\text{C}^{35}\text{ClF}$

2	1	1	0	4	4	2	0	2	0	3	3	8967.1914	0.0035
2	0	2	0	3	2	1	1	1	0	2	1	11141.0212	0.0023
2	0	2	0	3	3	1	1	1	0	2	2	11141.0264	0.0023
2	0	2	0	2	1	1	1	1	0	2	1	11153.6656	-0.0024
2	0	2	0	2	2	1	1	1	0	2	2	11153.6703	-0.0012
2	0	2	0	2	2	1	1	1	0	3	3	11163.3991	-0.0054
2	0	2	0	2	1	1	1	1	0	3	2	11163.4048	-0.0039
2	0	2	0	4	4	1	1	1	0	3	3	11168.4474	0.0067
2	0	2	0	4	3	1	1	1	0	3	2	11168.4474	0.0067
2	0	2	0	2	1	1	1	1	0	1	0	11171.1868	0.0019
2	0	2	0	2	2	1	1	1	0	1	1	11171.2025	0.0004
2	0	2	0	1	0	1	1	1	0	2	1	11171.3305	-0.0047
2	0	2	0	1	1	1	1	1	0	2	2	11171.3380	-0.0031
2	0	2	0	1	0	1	1	1	0	1	1	11188.8587	-0.0010
2	0	2	0	1	1	1	1	1	0	1	0	11188.8629	-0.0012
2	0	2	0	1	1	1	1	1	0	1	1	11188.8696	-0.0021
3	1	2	0	4	4	2	2	1	0	3	3	11457.4372	0.0030
3	1	2	0	4	3	2	2	1	0	3	2	11457.4372	-0.0001
3	1	2	1	2	5	2	2	1	1	2	4	11489.7978	-0.0029
3	1	2	1	0	6	2	2	1	1	0	5	11489.8108	0.0033
3	1	2	1	3	5	2	2	1	1	3	4	11489.8217	0.0078
3	1	2	1	12	3	2	2	1	1	12	2	11489.8217	0.0057
3	1	2	0	2	2	2	2	1	0	1	1	11509.4641	-0.0056
3	1	2	0	3	2	3	0	3	0	2	1	12407.6453	0.0066
3	1	2	0	3	3	3	0	3	0	2	2	12407.6453	0.0029
3	1	2	0	4	3	3	0	3	0	5	4	12408.9535	-0.0028
3	1	2	0	4	4	3	0	3	0	5	5	12408.9535	-0.0067
3	1	2	0	4	4	3	0	3	0	3	3	12417.9926	0.0035
3	1	2	0	2	1	3	0	3	0	2	1	12421.7140	0.0033
3	1	2	0	2	2	3	0	3	0	2	2	12421.7140	-0.0026
3	1	2	1	3	5	3	0	3	1	3	5	12423.0190	-0.0006
3	1	2	1	6	4	3	0	3	1	6	4	12423.0190	-0.0018
3	1	2	1	8	4	3	0	3	1	8	4	12423.0270	0.0026
3	1	2	1	5	4	3	0	3	1	5	4	12423.0270	0.0025
3	1	2	1	0	6	3	0	3	1	0	6	12423.0270	0.0015
3	1	2	1	2	5	3	0	3	1	2	5	12423.0348	0.0043
3	1	2	0	3	2	3	0	3	0	3	2	12424.5546	0.0033
3	1	2	0	3	3	3	0	3	0	3	3	12424.5546	-0.0021
3	1	2	0	4	4	3	0	3	0	4	4	12425.9058	-0.0023
3	1	2	0	3	2	3	0	3	0	4	3	12432.4684	-0.0027
3	1	2	0	3	3	3	0	3	0	4	4	12432.4684	-0.0072
3	1	2	0	2	1	3	0	3	0	3	2	12438.6182	-0.0051
3	1	2	0	2	2	3	0	3	0	3	3	12438.6257	-0.0052
3	1	2	0	5	5	3	0	3	0	4	4	12439.9777	0.0030

Table S3: Observed Transition Frequencies (in MHz) for $^{13}\text{CH}_2\text{C}^{35}\text{ClF}$

1	1	1	0	1	1	0	0	0	0	2	2	13729.1228	-0.0025
1	1	1	0	1	0	0	0	0	0	2	1	13729.1277	-0.0053
1	1	1	0	3	2	0	0	0	0	2	1	13736.9088	-0.0004
1	1	1	0	3	3	0	0	0	0	2	2	13736.9250	0.0021
1	1	1	0	2	1	0	0	0	0	2	1	13746.6527	0.0029
1	1	1	0	2	2	0	0	0	0	2	2	13746.6527	-0.0032
2	1	2	0	3	2	1	1	1	0	2	1	15156.2912	0.0017
2	1	2	0	3	3	1	1	1	0	2	2	15156.2999	0.0025
2	1	2	0	2	2	1	1	1	0	2	2	15162.4247	-0.0011
2	1	2	0	3	2	1	1	1	0	3	2	15166.0295	-0.0007
2	1	2	0	3	3	1	1	1	0	3	3	15166.0295	-0.0009
2	1	2	0	1	0	1	1	1	0	2	1	15170.9934	-0.0033
2	1	2	0	1	1	1	1	1	0	2	2	15171.0037	-0.0017
2	1	2	0	2	2	1	1	1	0	3	3	15172.1554	-0.0034
2	1	2	0	2	1	1	1	1	0	3	2	15172.1554	-0.0052
2	1	2	0	4	3	1	1	1	0	3	2	15174.5949	0.0058
2	1	2	0	4	4	1	1	1	0	3	3	15174.6004	0.0081
2	1	2	0	2	1	1	1	1	0	1	0	15179.9378	0.0009
2	1	2	0	2	2	1	1	1	0	1	1	15179.9555	-0.0009
2	1	2	0	1	0	1	1	1	0	1	1	15188.5203	-0.0009
2	1	2	0	1	1	1	1	1	0	1	1	15188.5342	-0.0019
4	2	2	0	3	3	4	1	3	0	3	3	15233.4031	0.0007
4	2	2	0	6	6	4	1	3	0	6	6	15235.6245	0.0006
4	2	2	0	4	4	4	1	3	0	4	4	15239.7422	-0.0011
4	2	2	0	5	5	4	1	3	0	5	5	15241.9745	-0.0001
3	2	1	0	2	1	3	1	2	0	2	1	15292.5454	0.0042
3	2	1	0	2	2	3	1	2	0	2	2	15292.5524	0.0029
3	2	1	0	5	5	3	1	2	0	5	5	15298.4594	-0.0082
3	2	1	0	3	3	3	1	2	0	3	3	15305.2359	0.0014
3	2	1	0	4	4	3	1	2	0	4	4	15311.1674	-0.0025
2	2	0	0	1	1	2	1	1	0	1	1	16288.7227	0.0010
2	2	0	0	1	0	2	1	1	0	2	1	16298.4521	-0.0016
2	2	0	0	1	1	2	1	1	0	2	2	16298.4672	-0.0008
2	2	0	0	2	2	2	1	1	0	1	1	16306.3964	0.0031
2	2	0	0	4	3	2	1	1	0	4	3	16308.3018	-0.0068
2	2	0	0	4	4	2	1	1	0	4	4	16308.3172	-0.0039
2	2	0	0	2	1	2	1	1	0	2	1	16316.1327	0.0017
2	2	0	0	2	2	2	1	1	0	2	2	16316.1410	0.0013
2	2	0	0	4	3	2	1	1	0	3	2	16318.0357	0.0013
2	2	0	0	4	4	2	1	1	0	3	3	16318.0512	0.0008
2	2	0	0	2	1	2	1	1	0	3	2	16323.0855	-0.0016
2	2	0	0	2	2	2	1	1	0	3	3	16323.0912	-0.0021
2	2	0	0	3	2	2	1	1	0	2	1	16328.7762	0.0060
2	2	0	0	3	3	2	1	1	0	2	2	16328.7880	0.0051

Table S3: Observed Transition Frequencies (in MHz) for $^{13}\text{CH}_2\text{C}^{35}\text{ClF}$

2	2	0	0	3	2	2	1	1	0	3	2	16335.7278	0.0016
2	2	0	0	3	3	2	1	1	0	3	3	16335.7363	-0.0002
2	0	2	0	2	1	1	0	1	0	1	0	16473.0364	-0.0003
2	0	2	0	2	2	1	0	1	0	1	1	16473.0498	-0.0005
2	0	2	0	3	2	1	0	1	0	3	2	16475.0501	-0.0002
2	0	2	0	3	3	1	0	1	0	3	3	16475.0501	-0.0042
2	0	2	0	1	0	1	0	1	0	1	1	16490.7069	-0.0010
2	0	2	0	1	1	1	0	1	0	1	1	16490.7175	-0.0024
2	0	2	0	4	3	1	0	1	0	3	2	16492.7361	0.0046
2	0	2	0	4	4	1	0	1	0	3	3	16492.7412	0.0033
2	0	2	0	3	2	1	0	1	0	2	1	16493.3570	0.0043
2	0	2	0	3	3	1	0	1	0	2	2	16493.3650	0.0043
2	0	2	0	2	1	1	0	1	0	2	1	16505.9999	-0.0019
2	0	2	0	2	2	1	0	1	0	2	2	16506.0083	0.0002
2	0	2	0	1	0	1	0	1	0	2	1	16523.6660	-0.0030
2	0	2	0	1	1	1	0	1	0	2	2	16523.6772	-0.0005
2	1	1	0	3	2	1	1	0	0	2	1	18451.7295	0.0008
2	1	1	0	3	3	1	1	0	0	2	2	18451.7380	-0.0005
2	1	1	0	2	2	1	1	0	0	2	2	18458.6887	-0.0034
2	1	1	0	3	2	1	1	0	0	3	2	18460.3020	-0.0006
2	1	1	0	3	3	1	1	0	0	3	3	18460.3020	-0.0017
2	1	1	0	4	3	1	1	0	0	3	2	18470.0318	0.0035
2	1	1	0	4	4	1	1	0	0	3	3	18470.0381	0.0051
2	1	1	0	2	1	1	1	0	0	1	0	18474.1118	0.0047
2	1	1	0	2	2	1	1	0	0	1	1	18474.1309	0.0011
2	1	1	0	1	1	1	1	0	0	1	1	18483.8757	-0.0004
3	0	3	0	4	3	2	1	2	0	4	3	19974.7971	-0.0037
3	0	3	0	4	4	2	1	2	0	4	4	19974.7971	-0.0048
3	0	3	0	4	3	2	1	2	0	3	2	19983.3605	0.0007
3	0	3	0	4	4	2	1	2	0	3	3	19983.3663	0.0025
3	0	3	0	3	2	2	1	2	0	2	1	19985.1483	-0.0008
3	0	3	0	3	3	2	1	2	0	2	2	19985.1543	-0.0001
3	0	3	0	3	2	2	1	2	0	3	2	19991.2778	-0.0018
3	0	3	0	3	3	2	1	2	0	3	3	19991.2778	-0.0050
3	0	3	0	5	4	2	1	2	0	4	3	19991.7526	0.0056
3	0	3	0	5	5	2	1	2	0	4	4	19991.7526	0.0029
3	0	3	0	2	2	2	1	2	0	1	1	19993.4876	-0.0014
3	0	3	0	2	2	2	1	2	0	2	2	20002.0674	-0.0013
2	1	2	0	2	1	1	0	1	0	1	0	20481.7873	-0.0014
2	1	2	0	2	2	1	0	1	0	1	1	20481.8038	-0.0008
2	1	2	0	3	3	1	0	1	0	3	3	20490.3228	-0.0048
2	1	2	0	1	1	1	0	1	0	1	1	20490.3811	-0.0032
2	1	2	0	4	3	1	0	1	0	3	2	20498.8804	0.0005
2	1	2	0	4	4	1	0	1	0	3	3	20498.8917	0.0022

Table S3: Observed Transition Frequencies (in MHz) for $^{13}\text{CH}_2\text{C}^{35}\text{ClF}$

2	1	2	0	3	2	1	0	1	0	2	1	20508.6241	0.0008
2	1	2	0	3	3	1	0	1	0	2	2	20508.6380	0.0040
2	1	2	0	2	1	1	0	1	0	2	1	20514.7517	-0.0021
2	1	2	0	2	2	1	0	1	0	2	2	20514.7624	0.0000

Table S4: Observed Transition Frequencies (in MHz) for CH₂C³⁷ClF

J'	K_a'	K_c'	s'	m_1'	m_2'	J''	K_a''	K_c''	s''	m_1''	m_2''	Observed	Obs - Calc
1	1	0	0	1	1	1	0	1	0	1	0	7279.6309	-0.0010
1	1	0	0	1	1	1	0	1	0	1	1	7279.6352	-0.0002
1	1	0	0	1	0	1	0	1	0	1	1	7279.6430	0.0004
1	1	0	1	10	2	1	0	1	1	18	1	7291.7920	-0.0009
1	1	0	1	10	2	1	0	1	1	11	2	7291.7976	0.0012
1	1	0	1	14	1	1	0	1	1	15	1	7291.7976	0.0012
1	1	0	1	20	0	1	0	1	1	18	1	7291.7976	0.0011
1	1	0	1	9	2	1	0	1	1	17	1	7291.7995	-0.0005
1	1	0	1	7	2	1	0	1	1	15	1	7291.8045	0.0024
1	1	0	1	4	3	1	0	1	1	11	2	7291.8045	0.0017
1	1	0	1	12	1	1	0	1	1	12	1	7296.5360	-0.0038
1	1	0	1	3	3	1	0	1	1	3	3	7296.5445	0.0006
1	1	0	1	6	2	1	0	1	1	6	2	7296.5445	-0.0007
1	1	0	1	5	2	1	0	1	1	5	2	7296.5483	0.0010
1	1	0	1	0	4	1	0	1	1	0	4	7296.5483	-0.0017
1	1	0	1	1	3	1	0	1	1	1	3	7296.5507	-0.0012
1	1	0	1	2	3	1	0	1	1	2	3	7296.5601	0.0028
1	1	0	0	2	2	1	0	1	0	3	3	7303.2999	-0.0029
1	1	0	0	2	1	1	0	1	0	3	2	7303.2999	-0.0034
1	1	0	1	17	1	1	0	1	1	9	2	7305.5067	0.0010
1	1	0	1	15	1	1	0	1	1	7	2	7305.5090	0.0002
1	1	0	1	11	2	1	0	1	1	4	3	7305.5090	-0.0006
1	1	0	1	11	2	1	0	1	1	10	2	7305.5149	0.0027
1	1	0	1	21	0	1	0	1	1	13	1	7305.5149	0.0015
1	1	0	1	18	1	1	0	1	1	16	1	7305.5149	0.0000
1	1	0	1	18	1	1	0	1	1	10	2	7305.5195	0.0001
1	1	0	0	3	2	1	0	1	0	2	1	7310.9180	0.0036
1	1	0	0	3	3	1	0	1	0	2	2	7310.9269	0.0023
1	1	0	1	9	2	1	0	1	1	9	2	7317.6732	0.0029
1	1	0	1	10	2	1	0	1	1	10	2	7317.6732	0.0000
1	1	0	1	7	2	1	0	1	1	7	2	7317.6764	0.0009
1	1	0	1	4	3	1	0	1	1	4	3	7317.6764	-0.0006
1	1	0	1	13	1	1	0	1	1	13	1	7317.6791	-0.0041
1	0	1	0	2	1	0	0	0	0	2	1	8324.2655	0.0007
1	0	1	0	2	2	0	0	0	0	2	2	8324.2655	-0.0021
1	0	1	0	3	2	0	0	0	0	2	1	8338.6370	0.0030
1	0	1	0	3	3	0	0	0	0	2	2	8338.6432	0.0029
1	0	1	0	1	1	0	0	0	0	2	2	8350.1394	-0.0016
2	1	1	0	2	1	2	0	2	0	1	1	9143.9383	-0.0017
2	1	1	0	2	1	2	0	2	0	1	0	9143.9429	-0.0073
2	1	1	0	2	2	2	0	2	0	1	1	9143.9528	0.0009
2	1	1	0	3	2	2	0	2	0	4	3	9148.4821	-0.0042
2	1	1	0	3	3	2	0	2	0	4	4	9148.4821	-0.0066

Table S4: Observed Transition Frequencies (in MHz) for CH₂C³⁷ClF

2	1	1	0	1	0	2	0	2	0	1	1	9151.5616	0.0012
2	1	1	0	1	1	2	0	2	0	1	1	9151.5751	-0.0003
2	1	1	0	1	1	2	0	2	0	1	0	9151.5848	-0.0008
2	1	1	0	3	2	2	0	2	0	2	1	9152.4659	0.0021
2	1	1	0	3	3	2	0	2	0	2	2	9152.4721	0.0025
2	1	1	0	4	3	2	0	2	0	4	3	9156.0974	0.0005
2	1	1	0	4	4	2	0	2	0	4	4	9156.1010	-0.0012
2	1	1	0	2	1	2	0	2	0	2	1	9157.9055	-0.0006
2	1	1	0	2	2	2	0	2	0	2	2	9157.9097	-0.0002
2	1	1	0	3	2	2	0	2	0	3	2	9162.4510	-0.0002
2	1	1	0	3	3	2	0	2	0	3	3	9162.4555	-0.0001
2	1	1	0	1	0	2	0	2	0	2	1	9165.5250	-0.0015
2	1	1	0	1	1	2	0	2	0	2	2	9165.5319	-0.0014
2	1	1	0	1	1	2	0	2	0	2	1	9165.5380	-0.0035
2	1	1	0	2	1	2	0	2	0	3	2	9167.8926	-0.0009
2	1	1	0	2	2	2	0	2	0	3	3	9167.8926	-0.0032
2	1	1	0	4	3	2	0	2	0	3	2	9170.0664	0.0047
2	1	1	0	4	4	2	0	2	0	3	3	9170.0740	0.0049
3	1	2	0	4	3	3	1	3	0	5	4	9405.0687	-0.0034
3	1	2	0	4	4	3	1	3	0	5	5	9405.0687	-0.0055
3	1	2	0	3	2	3	1	3	0	2	1	9405.4481	0.0015
3	1	2	0	3	3	3	1	3	0	2	2	9405.4481	-0.0004
3	1	2	0	4	3	3	1	3	0	3	2	9410.5283	0.0030
3	1	2	0	4	4	3	1	3	0	3	3	9410.5333	0.0037
3	1	2	0	4	3	3	1	3	0	4	3	9415.3086	0.0017
3	1	2	0	4	4	3	1	3	0	4	4	9415.3086	-0.0020
3	1	2	0	3	2	3	1	3	0	3	2	9415.6888	0.0023
3	1	2	0	3	3	3	1	3	0	3	3	9415.6888	-0.0012
3	1	2	0	5	4	3	1	3	0	5	4	9416.1282	0.0035
3	1	2	0	5	5	3	1	3	0	5	5	9416.1282	-0.0005
3	1	2	0	2	1	3	1	3	0	2	1	9416.5049	0.0015
3	1	2	0	2	2	3	1	3	0	2	2	9416.5049	-0.0023
3	1	2	0	3	2	3	1	3	0	4	3	9420.4655	-0.0027
3	1	2	0	3	3	3	1	3	0	4	4	9420.4655	-0.0055
3	1	2	0	5	4	3	1	3	0	4	3	9426.3651	0.0056
3	1	2	0	5	5	3	1	3	0	4	4	9426.3716	0.0066
3	1	2	0	2	1	3	1	3	0	3	2	9426.7397	-0.0037
3	1	2	0	2	2	3	1	3	0	3	3	9426.7460	-0.0027
3	1	2	0	4	4	2	2	1	0	3	3	9977.9838	0.0030
3	1	2	0	4	3	2	2	1	0	3	2	9977.9838	0.0008
3	1	2	0	3	3	2	2	1	0	3	3	9983.1410	-0.0002
3	1	2	0	3	2	2	2	1	0	3	2	9983.1410	-0.0033
3	1	2	0	4	4	2	2	1	0	4	4	9992.3550	0.0013
3	1	2	0	4	3	2	2	1	0	4	3	9992.3605	-0.0002

Table S4: Observed Transition Frequencies (in MHz) for CH₂C³⁷ClF

3	1	2	0	3	2	2	2	1	0	2	1	9993.4129	0.0013
3	1	2	0	3	3	2	2	1	0	2	2	9993.4129	0.0011
3	1	2	0	2	2	2	2	1	0	3	3	9994.1960	-0.0039
3	1	2	0	2	1	2	2	1	0	3	2	9994.1960	-0.0051
3	1	2	0	3	3	2	2	1	0	4	4	9997.5104	-0.0037
3	1	2	0	3	2	2	2	1	0	4	3	9997.5181	-0.0039
3	1	2	0	2	1	2	2	1	0	2	1	10004.4685	0.0001
3	1	2	0	2	2	2	2	1	0	2	2	10004.4685	-0.0021
3	1	2	0	2	2	2	2	1	0	1	1	10018.8420	-0.0011
3	1	2	0	2	1	2	2	1	0	1	0	10018.8451	-0.0006
2	0	2	0	3	2	1	1	1	0	2	1	10646.8899	0.0009
2	0	2	0	3	3	1	1	1	0	2	2	10646.8947	0.0012
2	0	2	0	3	3	1	1	1	0	3	3	10654.5085	0.0004
2	0	2	0	3	2	1	1	1	0	3	2	10654.5085	-0.0015
2	0	2	0	2	1	1	1	1	0	2	1	10656.8779	0.0015
2	0	2	0	2	2	1	1	1	0	2	2	10656.8779	-0.0015
2	0	2	0	2	2	1	1	1	0	3	3	10664.4913	-0.0028
2	0	2	0	2	1	1	1	1	0	3	2	10664.4948	-0.0026
2	0	2	0	4	3	1	1	1	0	3	2	10668.4790	0.0042
2	0	2	0	4	4	1	1	1	0	3	3	10668.4790	0.0040
2	0	2	0	2	1	1	1	1	0	1	0	10670.5814	0.0009
2	0	2	0	2	1	1	1	1	0	1	1	10670.5894	0.0025
2	0	2	0	2	2	1	1	1	0	1	1	10670.5961	0.0010
2	0	2	0	1	0	1	1	1	0	2	1	10670.8301	-0.0021
2	0	2	0	1	1	1	1	1	0	2	2	10670.8345	-0.0029
2	0	2	0	1	0	1	1	1	0	1	1	10684.5427	-0.0001
2	0	2	0	1	1	1	1	1	0	1	0	10684.5463	-0.0003
2	0	2	0	1	1	1	1	1	0	1	1	10684.5523	-0.0007
3	1	2	0	3	2	3	0	3	0	2	1	12385.9747	0.0028
3	1	2	0	3	3	3	0	3	0	2	2	12385.9773	0.0022
3	1	2	0	4	3	3	0	3	0	5	4	12387.0864	-0.0044
3	1	2	0	4	4	3	0	3	0	5	5	12387.0864	-0.0078
3	1	2	0	4	3	3	0	3	0	3	2	12394.2665	0.0035
3	1	2	0	4	4	3	0	3	0	3	3	12394.2724	0.0039
3	1	2	0	2	1	3	0	3	0	2	1	12397.0288	0.0001
3	1	2	0	2	2	3	0	3	0	2	2	12397.0340	0.0002
3	1	2	0	5	4	3	0	3	0	5	4	12398.1459	0.0025
3	1	2	0	5	5	3	0	3	0	5	5	12398.1459	-0.0028
3	1	2	0	3	2	3	0	3	0	3	2	12399.4242	-0.0001
3	1	2	0	3	3	3	0	3	0	3	3	12399.4287	-0.0002
3	1	2	0	4	3	3	0	3	0	4	3	12400.5528	0.0006
3	1	2	0	4	4	3	0	3	0	4	4	12400.5567	-0.0004
3	1	2	0	3	2	3	0	3	0	4	3	12405.7118	-0.0017
3	1	2	0	3	3	3	0	3	0	4	4	12405.7118	-0.0056

Table S4: Observed Transition Frequencies (in MHz) for CH₂C³⁷ClF

3	1	2	0	2	1	3	0	3	0	3	2	12410.4781	-0.0030
3	1	2	0	2	2	3	0	3	0	3	3	12410.4850	-0.0026
3	1	2	0	5	4	3	0	3	0	4	3	12411.6111	0.0063
3	1	2	0	5	5	3	0	3	0	4	4	12411.6182	0.0067
1	1	1	0	1	1	0	0	0	0	2	2	14054.2100	-0.0016
1	1	1	0	1	0	0	0	0	0	2	1	14054.2150	-0.0030
1	1	1	0	3	2	0	0	0	0	2	1	14060.3018	0.0007
1	1	1	0	3	3	0	0	0	0	2	2	14060.3132	0.0006
1	1	1	0	2	1	0	0	0	0	2	1	14067.9213	-0.0008
1	1	1	0	2	2	0	0	0	0	2	2	14067.9273	0.0001
2	1	2	0	3	2	1	1	1	0	2	1	15085.8563	-0.0005
2	1	2	0	3	3	1	1	1	0	2	2	15085.8643	0.0008
2	1	2	0	2	1	1	1	1	0	2	1	15090.6907	0.0034
2	1	2	0	2	2	1	1	1	0	2	2	15090.6907	-0.0015
2	1	2	0	3	2	1	1	1	0	3	2	15093.4774	-0.0004
2	1	2	0	3	3	1	1	1	0	3	3	15093.4774	-0.0007
2	1	2	0	1	0	1	1	1	0	2	1	15097.4429	-0.0024
2	1	2	0	1	1	1	1	1	0	2	2	15097.4497	-0.0030
2	1	2	0	2	2	1	1	1	0	3	3	15098.3044	-0.0024
2	1	2	0	2	1	1	1	1	0	3	2	15098.3044	-0.0039
2	1	2	0	4	3	1	1	1	0	3	2	15100.2289	0.0035
2	1	2	0	4	4	1	1	1	0	3	3	15100.2325	0.0043
2	1	2	0	2	1	1	1	1	0	1	0	15104.3928	0.0014
2	1	2	0	2	1	1	1	1	0	1	1	15104.4008	0.0030
2	1	2	0	2	2	1	1	1	0	1	1	15104.4086	0.0008
2	1	2	0	1	0	1	1	1	0	1	1	15111.1557	-0.0002
2	1	2	0	1	1	1	1	1	0	1	0	15111.1612	-0.0008
2	1	2	0	1	1	1	1	1	0	1	1	15111.1675	-0.0009
4	1	3	0	5	4	4	1	4	0	5	4	15524.5819	0.0016
4	1	3	0	5	5	4	1	4	0	5	5	15524.5842	-0.0010
4	1	3	0	4	3	4	1	4	0	4	3	15524.8201	0.0018
4	1	3	0	4	4	4	1	4	0	4	4	15524.8201	-0.0030
4	1	3	0	6	5	4	1	4	0	6	5	15525.2651	0.0024
4	1	3	0	6	6	4	1	4	0	6	6	15525.2694	0.0015
4	1	3	0	3	2	4	1	4	0	3	2	15525.5015	0.0016
4	1	3	0	3	3	4	1	4	0	3	3	15525.5015	-0.0035
4	2	2	0	4	3	4	1	3	0	3	2	16059.8215	0.0043
4	2	2	0	4	4	4	1	3	0	3	3	16059.8247	0.0039
4	2	2	0	5	4	4	1	3	0	6	5	16061.6506	-0.0059
4	2	2	0	5	5	4	1	3	0	6	6	16061.6506	-0.0096
4	2	2	0	3	2	4	1	3	0	3	2	16066.8137	0.0004
4	2	2	0	3	3	4	1	3	0	3	3	16066.8192	0.0006
4	2	2	0	6	5	4	1	3	0	6	5	16068.6441	-0.0005
4	2	2	0	6	6	4	1	3	0	6	6	16068.6492	-0.0008

Table S4: Observed Transition Frequencies (in MHz) for CH₂C³⁷ClF

4	2	2	0	5	4	4	1	3	0	4	3	16069.5940	0.0049
4	2	2	0	5	5	4	1	3	0	4	4	16069.6002	0.0055
4	2	2	0	4	3	4	1	3	0	4	3	16072.0396	0.0001
4	2	2	0	4	4	4	1	3	0	4	4	16072.0450	0.0004
4	2	2	0	5	4	4	1	3	0	5	4	16073.8766	-0.0003
4	2	2	0	5	5	4	1	3	0	5	5	16073.8817	-0.0003
4	2	2	0	4	3	4	1	3	0	5	4	16076.3218	-0.0055
4	2	2	0	4	4	4	1	3	0	5	5	16076.3266	-0.0053
4	2	2	0	3	2	4	1	3	0	4	3	16079.0325	-0.0031
4	2	2	0	3	3	4	1	3	0	4	4	16079.0390	-0.0033
4	2	2	0	6	5	4	1	3	0	5	4	16080.8722	0.0072
4	2	2	0	6	6	4	1	3	0	5	5	16080.8790	0.0072
3	2	1	0	3	2	3	1	2	0	2	1	16359.3050	0.0029
3	2	1	0	3	3	3	1	2	0	2	2	16359.3096	0.0030
3	2	1	0	2	1	3	1	2	0	2	1	16360.2233	0.0000
3	2	1	0	2	2	3	1	2	0	2	2	16360.2307	0.0006
3	2	1	0	4	3	3	1	2	0	5	4	16364.0400	-0.0058
3	2	1	0	4	4	3	1	2	0	5	5	16364.0441	-0.0063
3	2	1	0	5	4	3	1	2	0	5	4	16364.9513	-0.0007
3	2	1	0	5	5	3	1	2	0	5	5	16364.9577	-0.0012
3	2	1	0	4	3	3	1	2	0	3	2	16369.9408	0.0037
3	2	1	0	4	4	3	1	2	0	3	3	16369.9486	0.0042
3	2	1	0	3	2	3	1	2	0	3	2	16370.3592	0.0003
3	2	1	0	3	3	3	1	2	0	3	3	16370.3661	0.0008
3	2	1	0	2	1	3	1	2	0	3	2	16371.2785	-0.0017
3	2	1	0	2	2	3	1	2	0	3	3	16371.2872	-0.0016
3	2	1	0	4	3	3	1	2	0	4	3	16375.0977	-0.0006
3	2	1	0	4	4	3	1	2	0	4	4	16375.1045	-0.0003
3	2	1	0	3	2	3	1	2	0	4	3	16375.5165	-0.0037
3	2	1	0	3	3	3	1	2	0	4	4	16375.5222	-0.0035
3	2	1	0	5	4	3	1	2	0	4	3	16376.0096	0.0051
3	2	1	0	5	5	3	1	2	0	4	4	16376.0181	0.0047
2	0	2	0	2	1	1	0	1	0	1	0	16374.6543	0.0003
2	0	2	0	2	1	1	0	1	0	1	1	16374.6609	0.0034
2	0	2	0	2	2	1	0	1	0	1	1	16374.6671	0.0014
2	0	2	0	3	2	1	0	1	0	3	2	16376.1786	0.0016
2	0	2	0	3	3	1	0	1	0	3	3	16376.1786	-0.0019
2	0	2	0	2	1	1	0	1	0	3	2	16386.1617	-0.0027
2	0	2	0	2	2	1	0	1	0	3	3	16386.1617	-0.0047
2	0	2	0	1	0	1	0	1	0	1	1	16388.6131	-0.0003
2	0	2	0	1	1	1	0	1	0	1	0	16388.6195	-0.0006
2	0	2	0	1	1	1	0	1	0	1	1	16388.6232	-0.0004
2	0	2	0	4	3	1	0	1	0	3	2	16390.1446	0.0027
2	0	2	0	4	4	1	0	1	0	3	3	16390.1511	0.0038

Table S4: Observed Transition Frequencies (in MHz) for CH₂C³⁷ClF

2	0	2	0	2	1	1	0	1	0	2	1	16400.5338	0.0002
2	0	2	0	2	2	1	0	1	0	2	2	16400.5392	0.0001
2	0	2	1	26	1	1	0	1	1	16	1	16414.4854	-0.0002
2	0	2	1	29	0	1	0	1	1	14	1	16414.4888	-0.0007
2	0	2	1	25	1	1	0	1	1	9	2	16414.4960	0.0021
2	0	2	1	23	1	1	0	1	1	7	2	16414.4960	-0.0010
2	0	2	1	19	2	1	0	1	1	4	3	16414.4960	-0.0018
5	2	3	0	4	3	5	1	4	0	4	3	17124.0472	0.0030
5	2	3	0	4	4	5	1	4	0	4	4	17124.0472	-0.0017
5	2	3	0	7	6	5	1	4	0	7	6	17124.7726	-0.0003
5	2	3	0	7	7	5	1	4	0	7	7	17124.7776	0.0000
5	2	3	0	5	4	5	1	4	0	5	4	17126.6401	-0.0006
5	2	3	0	5	5	5	1	4	0	5	5	17126.6440	-0.0012
5	2	3	0	6	5	5	1	4	0	6	5	17127.3776	-0.0010
5	2	3	0	6	6	5	1	4	0	6	6	17127.3821	-0.0011
4	1	3	0	4	3	4	0	4	0	3	2	17270.6039	0.0049
4	1	3	0	4	4	4	0	4	0	3	3	17270.6039	0.0006
4	1	3	0	5	4	4	0	4	0	6	5	17270.8838	-0.0050
4	1	3	0	5	5	4	0	4	0	6	6	17270.8838	-0.0094
4	1	3	0	5	4	4	0	4	0	4	3	17279.3482	0.0049
4	1	3	0	5	5	4	0	4	0	4	4	17279.3537	0.0045
4	1	3	0	3	2	4	0	4	0	3	2	17282.8250	0.0036
4	1	3	0	3	3	4	0	4	0	3	3	17282.8250	-0.0020
4	1	3	1	12	4	4	0	4	1	12	4	17283.1035	-0.0035
4	1	3	1	3	6	4	0	4	1	3	6	17283.1035	-0.0045
4	1	3	1	6	5	4	0	4	1	6	5	17283.1035	-0.0057
4	1	3	1	0	7	4	0	4	1	0	7	17283.1112	-0.0024
4	1	3	1	1	6	4	0	4	1	1	6	17283.1112	-0.0038
4	1	3	1	2	6	4	0	4	1	2	6	17283.1148	-0.0035
4	1	3	0	4	3	4	0	4	0	4	3	17283.6308	-0.0003
4	1	3	0	4	4	4	0	4	0	4	4	17283.6349	-0.0016
4	1	3	0	5	4	4	0	4	0	5	4	17283.9154	0.0007
4	1	3	0	5	5	4	0	4	0	5	5	17283.9189	-0.0013
4	1	3	0	4	3	4	0	4	0	5	4	17288.1999	-0.0026
4	1	3	0	4	4	4	0	4	0	5	5	17288.1999	-0.0076
4	1	3	0	3	2	4	0	4	0	4	3	17295.8492	-0.0043
4	1	3	0	3	3	4	0	4	0	4	4	17295.8560	-0.0042
4	1	3	0	6	5	4	0	4	0	5	4	17296.1419	0.0068
4	1	3	0	6	6	4	0	4	0	5	5	17296.1498	0.0079
2	2	0	0	1	0	2	1	1	0	1	1	17438.9494	0.0025
2	2	0	0	1	1	2	1	1	0	1	1	17438.9708	0.0001
2	2	0	0	1	1	2	1	1	0	1	0	17438.9845	-0.0012
2	2	0	0	1	0	2	1	1	0	2	1	17446.5819	-0.0004
2	2	0	0	1	1	2	1	1	0	2	2	17446.5933	-0.0009

Table S4: Observed Transition Frequencies (in MHz) for CH₂C³⁷ClF

2	2	0	0	2	1	2	1	1	0	1	0	17452.9276	0.0014
2	2	0	0	2	2	2	1	1	0	1	1	17452.9323	0.0019
2	2	0	1	12	2	2	1	1	1	12	2	17454.3821	-0.0012
2	2	0	1	3	4	2	1	1	1	3	4	17454.3857	0.0003
2	2	0	1	6	3	2	1	1	1	6	3	17454.3857	-0.0013
2	2	0	1	0	5	2	1	1	1	0	5	17454.3945	-0.0010
2	2	0	1	1	4	2	1	1	1	1	4	17454.3945	-0.0027
2	2	0	1	2	4	2	1	1	1	2	4	17454.3999	-0.0020
2	2	0	0	2	1	2	1	1	0	2	1	17460.5467	0.0000
2	2	0	0	2	2	2	1	1	0	2	2	17460.5546	0.0008
2	2	0	0	4	3	2	1	1	0	3	2	17462.0005	0.0030
2	2	0	0	4	4	2	1	1	0	3	3	17462.0126	0.0019
2	2	0	0	2	1	2	1	1	0	3	2	17465.9868	-0.0022
2	2	0	0	2	2	2	1	1	0	3	3	17465.9924	-0.0016
2	2	0	0	3	2	2	1	1	0	4	3	17468.3551	-0.0042
2	2	0	0	3	3	2	1	1	0	4	4	17468.3606	-0.0041
2	2	0	0	3	2	2	1	1	0	2	1	17470.5307	0.0032
2	2	0	0	3	3	2	1	1	0	2	2	17470.5409	0.0029
2	2	0	0	3	2	2	1	1	0	3	2	17475.9697	-0.0001
2	2	0	0	3	3	2	1	1	0	3	3	17475.9786	0.0004
2	1	1	0	3	2	1	1	0	0	2	1	18235.3273	0.0024
2	1	1	0	3	3	1	1	0	0	2	2	18235.3346	0.0014
2	1	1	0	2	1	1	1	0	0	2	1	18240.7671	-0.0001
2	1	1	0	2	2	1	1	0	0	2	2	18240.7721	-0.0013
2	1	1	0	3	2	1	1	0	0	3	2	18242.0834	0.0004
2	1	1	0	3	3	1	1	0	0	3	3	18242.0834	-0.0008
2	1	1	0	2	2	1	1	0	0	3	3	18247.5216	-0.0028
2	1	1	0	2	1	1	1	0	0	3	2	18247.5216	-0.0038
2	1	1	0	1	0	1	1	0	0	2	1	18248.3856	-0.0021
2	1	1	0	1	1	1	1	0	0	2	2	18248.3941	-0.0027
2	1	1	0	4	3	1	1	0	0	3	2	18249.6969	0.0033
2	1	1	0	4	4	1	1	0	0	3	3	18249.7025	0.0048
2	1	1	0	2	1	1	1	0	0	1	0	18252.9228	0.0018
2	1	1	0	2	1	1	1	0	0	1	1	18252.9296	0.0014
2	1	1	0	2	2	1	1	0	0	1	1	18252.9408	0.0006
2	1	1	0	1	0	1	1	0	0	1	1	18260.5485	-0.0002
2	1	1	0	1	1	1	1	0	0	1	0	18260.5554	-0.0010
2	1	1	0	1	1	1	1	0	0	1	1	18260.5630	-0.0006
3	0	3	0	4	3	2	1	2	0	4	3	19487.9685	-0.0008
3	0	3	0	4	4	2	1	2	0	4	4	19487.9685	-0.0018
3	0	3	0	3	2	2	1	2	0	4	3	19494.2540	-0.0045
3	0	3	0	3	3	2	1	2	0	4	4	19494.2540	-0.0048
3	0	3	0	4	3	2	1	2	0	3	2	19494.7194	0.0025
3	0	3	0	4	4	2	1	2	0	3	3	19494.7240	0.0036

Table S4: Observed Transition Frequencies (in MHz) for CH₂C³⁷ClF

3	0	3	0	3	2	2	1	2	0	2	1	19496.1758	0.0002
3	0	3	0	3	3	2	1	2	0	2	2	19496.1820	0.0018
3	0	3	0	3	2	2	1	2	0	3	2	19501.0070	0.0009
3	0	3	0	3	3	2	1	2	0	3	3	19501.0070	-0.0020
3	0	3	0	5	4	2	1	2	0	4	3	19501.4366	0.0059
3	0	3	0	5	5	2	1	2	0	4	4	19501.4366	0.0035
3	0	3	0	2	2	2	1	2	0	1	1	19502.8738	0.0003
3	0	3	0	2	1	2	1	2	0	2	1	19509.6256	-0.0024
3	0	3	0	2	2	2	1	2	0	2	2	19509.6331	-0.0009
3	0	3	0	2	1	2	1	2	0	3	2	19514.4549	-0.0036
3	0	3	0	2	2	2	1	2	0	3	3	19514.4589	-0.0039
4	1	3	0	5	5	3	2	2	0	4	4	20802.3437	0.0011
4	1	3	0	5	4	3	2	2	0	4	3	20802.3494	0.0022
4	1	3	0	4	4	3	2	2	0	3	3	20806.6364	-0.0007
4	1	3	0	4	3	3	2	2	0	3	2	20806.6419	0.0002
4	1	3	0	6	6	3	2	2	0	5	5	20814.5788	0.0057
4	1	3	0	6	5	3	2	2	0	5	4	20814.5788	0.0034
4	1	3	0	3	3	3	2	2	0	2	2	20818.8467	-0.0011
4	1	3	0	3	2	3	2	2	0	2	1	20818.8467	-0.0034
2	1	2	0	2	1	1	0	1	0	1	0	20808.4650	0.0001
2	1	2	0	2	1	1	0	1	0	1	1	20808.4713	0.0029
2	1	2	0	2	2	1	0	1	0	1	1	20808.4797	0.0013
2	1	2	0	3	2	1	0	1	0	3	2	20815.1434	-0.0015
2	1	2	0	3	3	1	0	1	0	3	3	20815.1489	-0.0015
2	1	2	0	1	0	1	0	1	0	1	1	20815.2265	0.0001
2	1	2	0	1	1	1	0	1	0	1	1	20815.2384	-0.0006
2	1	2	0	2	1	1	0	1	0	3	2	20819.9737	-0.0016
2	1	2	0	2	2	1	0	1	0	3	3	20819.9737	-0.0055
2	1	2	0	4	3	1	0	1	0	3	2	20821.8940	0.0015
2	1	2	0	4	4	1	0	1	0	3	3	20821.9029	0.0024
2	1	2	0	3	2	1	0	1	0	2	1	20829.5167	0.0026
2	1	2	0	3	3	1	0	1	0	2	2	20829.5261	0.0030
2	1	2	0	2	1	1	0	1	0	2	1	20834.3442	-0.0004
2	1	2	0	2	2	1	0	1	0	2	2	20834.3519	0.0001
2	1	2	1	26	1	1	0	1	1	16	1	20841.0987	0.0000
2	1	2	1	26	1	1	0	1	1	10	2	20841.1015	-0.0017
2	1	2	1	23	1	1	0	1	1	7	2	20841.1111	-0.0013
2	1	2	1	19	2	1	0	1	1	4	3	20841.1111	-0.0021
2	2	1	0	1	0	2	1	2	0	1	1	21881.0435	0.0031
2	2	1	0	1	1	2	1	2	0	1	1	21881.0638	-0.0004
2	2	1	0	1	1	2	1	2	0	1	0	21881.0768	0.0001
2	2	1	0	1	0	2	1	2	0	2	1	21887.8070	-0.0040
2	2	1	0	1	1	2	1	2	0	2	2	21887.8233	-0.0014
2	2	1	0	2	1	2	1	2	0	1	0	21895.4298	-0.0005

Table S4: Observed Transition Frequencies (in MHz) for CH₂C³⁷ClF

2	2	1	0	2	2	2	1	2	0	1	1	21895.4376	0.0009
2	2	1	1	3	4	2	1	2	1	3	4	21896.1583	-0.0001
2	2	1	1	6	3	2	1	2	1	6	3	21896.1583	-0.0025
2	2	1	1	0	5	2	1	2	1	0	5	21896.1712	0.0003
2	2	1	1	1	4	2	1	2	1	1	4	21896.1712	-0.0024
2	2	1	1	2	4	2	1	2	1	2	4	21896.1821	0.0010
2	2	1	0	2	1	2	1	2	0	2	1	21902.1865	-0.0018
2	2	1	0	2	2	2	1	2	0	2	2	21902.1968	-0.0005
2	2	1	0	2	2	2	1	2	0	2	1	21902.2089	0.0016
2	2	1	0	4	3	2	1	2	0	3	2	21902.9108	0.0024
2	2	1	0	4	4	2	1	2	0	3	3	21902.9252	0.0015
2	2	1	0	2	1	2	1	2	0	3	2	21907.0150	-0.0038
2	2	1	0	2	2	2	1	2	0	3	3	21907.0234	-0.0026
2	2	1	0	3	2	2	1	2	0	4	3	21910.5346	-0.0039
2	2	1	0	3	3	2	1	2	0	4	4	21910.5432	-0.0034
2	2	1	0	3	2	2	1	2	0	2	1	21912.4581	0.0025
2	2	1	0	3	3	2	1	2	0	2	2	21912.4704	0.0024
2	2	1	0	3	2	2	1	2	0	3	2	21917.2858	-0.0003
2	2	1	0	3	3	2	1	2	0	3	3	21917.2969	0.0002

Table S5: Observed Transition Frequencies (in MHz) for CH₂¹³C³⁷ClF

J'	K_a'	K_c'	s'	m_1'	m_2'	J''	K_a''	K_c''	s''	m_1''	m_2''	Observed	Obs - Calc
1	1	0	0	1	1	1	0	1	0	1	1	7283.2019	0.0009
1	1	0	0	2	2	1	0	1	0	1	1	7295.3768	0.0046
1	1	0	0	3	3	1	0	1	0	3	3	7300.1215	-0.0046
1	1	0	0	2	1	1	0	1	0	3	2	7306.8733	-0.0013
1	1	0	0	2	2	1	0	1	0	3	3	7306.8733	-0.0028
1	1	0	0	1	1	1	0	1	0	2	2	7309.0844	0.0014
1	1	0	0	3	3	1	0	1	0	2	2	7314.5055	0.0013
1	1	0	0	2	1	1	0	1	0	2	1	7321.2536	0.0053
1	1	0	0	2	2	1	0	1	0	2	2	7321.2536	-0.0006
1	0	1	0	2	1	0	0	0	0	2	1	8306.3003	0.0020
1	0	1	0	2	2	0	0	0	0	2	2	8306.3003	-0.0016
1	0	1	0	3	3	0	0	0	0	2	2	8320.6824	0.0024
1	0	1	0	1	1	0	0	0	0	2	2	8332.1834	-0.0005
2	1	1	0	2	2	2	0	2	0	1	1	9138.7876	0.0009
2	1	1	0	3	2	2	0	2	0	4	3	9143.3204	0.0017
2	1	1	0	3	3	2	0	2	0	4	4	9143.3204	-0.0062
2	1	1	0	1	1	2	0	2	0	1	1	9146.4135	-0.0002
2	1	1	0	3	3	2	0	2	0	2	2	9147.3126	0.0023
2	1	1	0	4	4	2	0	2	0	4	4	9150.9427	-0.0023
2	1	1	0	2	2	2	0	2	0	2	2	9152.7517	-0.0008
2	1	1	0	3	3	2	0	2	0	3	3	9157.3007	-0.0011
2	1	1	0	1	1	2	0	2	0	2	2	9160.3791	-0.0004
2	1	1	0	2	1	2	0	2	0	3	2	9162.7407	0.0037
2	1	1	0	2	2	2	0	2	0	3	3	9162.7407	-0.0033
2	1	1	0	4	4	2	0	2	0	3	3	9164.9236	0.0034
3	1	2	0	4	4	2	2	1	0	3	3	9887.1293	0.0040
3	1	2	0	4	3	2	2	1	0	3	2	9887.1293	0.0001
3	1	2	0	3	3	2	2	1	0	2	2	9902.5654	0.0013
3	1	2	0	3	2	2	2	1	0	2	1	9902.5654	0.0014
2	0	2	0	3	3	1	1	1	0	2	2	10603.6431	0.0017
2	0	2	0	3	3	1	1	1	0	3	3	10611.2605	0.0016
2	0	2	0	3	2	1	1	1	0	3	2	10611.2605	-0.0027
2	0	2	0	2	1	1	1	1	0	2	1	10613.6323	0.0023
2	0	2	0	2	2	1	1	1	0	2	2	10613.6323	-0.0007
2	0	2	0	2	2	1	1	1	0	3	3	10621.2464	-0.0040
2	0	2	0	2	1	1	1	1	0	3	2	10621.2528	-0.0037
2	0	2	0	4	4	1	1	1	0	3	3	10625.2400	0.0059
2	0	2	0	4	3	1	1	1	0	3	2	10625.2400	0.0042
2	0	2	0	2	1	1	1	1	0	1	0	10627.3386	0.0004
2	0	2	0	2	2	1	1	1	0	1	1	10627.3580	0.0009
2	0	2	0	1	1	1	1	1	0	2	2	10627.5972	-0.0016
2	0	2	0	1	0	1	1	1	0	1	1	10641.3122	0.0017
2	0	2	0	1	1	1	1	1	0	1	0	10641.3122	-0.0019

Table S5: Observed Transition Frequencies (in MHz) for CH₂¹³C³⁷ClF

2	0	2	0	1	1	1	1	1	0	1	1	10641.3226	-0.0004
3	1	2	0	3	3	3	0	3	0	2	2	12364.2946	0.0024
3	1	2	0	4	3	3	0	3	0	5	4	12365.4067	0.0049
3	1	2	0	4	4	3	0	3	0	5	5	12365.4067	-0.0070
3	1	2	0	4	4	3	0	3	0	3	3	12372.5971	0.0032
3	1	2	0	2	2	3	0	3	0	2	2	12375.3573	-0.0001
3	1	2	0	5	5	3	0	3	0	5	5	12376.4745	-0.0007
3	1	2	0	3	3	3	0	3	0	3	3	12377.7562	-0.0007
3	1	2	0	4	4	3	0	3	0	4	4	12378.8866	-0.0008
3	1	2	0	3	2	3	0	3	0	4	3	12384.0459	0.0076
3	1	2	0	3	3	3	0	3	0	4	4	12384.0459	-0.0045
3	1	2	0	2	1	3	0	3	0	3	2	12388.8040	-0.0023
3	1	2	0	2	2	3	0	3	0	3	3	12388.8188	-0.0033
1	1	1	0	1	1	0	0	0	0	2	2	14046.0571	-0.0009
1	1	1	0	1	0	0	0	0	0	2	1	14046.0626	-0.0044
1	1	1	0	3	2	0	0	0	0	2	1	14052.1528	0.0041
1	1	1	0	3	3	0	0	0	0	2	2	14052.1683	0.0036
1	1	1	0	2	1	0	0	0	0	2	1	14059.7705	-0.0046
1	1	1	0	2	2	0	0	0	0	2	2	14059.7815	-0.0007
2	1	2	0	3	3	1	1	1	0	2	2	15056.1776	-0.0001
2	1	2	0	2	1	1	1	1	0	2	1	15061.0044	0.0022
2	1	2	0	2	2	1	1	1	0	2	2	15061.0044	-0.0026
2	1	2	0	3	2	1	1	1	0	3	2	15063.7941	-0.0031
2	1	2	0	3	3	1	1	1	0	3	3	15063.7941	-0.0010
2	1	2	0	4	3	1	1	1	0	3	2	15070.5489	0.0033
2	1	2	0	4	4	1	1	1	0	3	3	15070.5489	0.0023
2	1	2	0	2	2	1	1	1	0	1	1	15074.7311	0.0000
2	1	2	0	1	1	1	1	1	0	1	1	15081.4908	-0.0019
4	2	2	0	6	6	4	1	3	0	6	6	16084.0669	-0.0006
4	2	2	0	4	4	4	1	3	0	4	4	16087.4694	-0.0010
4	2	2	0	5	4	4	1	3	0	5	4	16089.3079	0.0047
4	2	2	0	5	5	4	1	3	0	5	5	16089.3079	-0.0046
2	0	2	0	2	1	1	0	1	0	1	0	16341.2183	0.0014
2	0	2	0	2	2	1	0	1	0	1	1	16341.2322	0.0009
2	0	2	0	3	2	1	0	1	0	3	2	16342.7410	0.0012
2	0	2	0	3	3	1	0	1	0	3	3	16342.7410	-0.0026
2	0	2	0	1	0	1	0	1	0	1	1	16355.1843	-0.0004
2	0	2	0	1	1	1	0	1	0	1	1	16355.1952	-0.0020
2	0	2	0	4	3	1	0	1	0	3	2	16356.7159	0.0034
2	0	2	0	4	4	1	0	1	0	3	3	16356.7224	0.0036
2	0	2	0	3	2	1	0	1	0	2	1	16357.1159	0.0024
2	0	2	0	3	3	1	0	1	0	2	2	16357.1244	0.0026
2	0	2	0	2	2	1	0	1	0	2	2	16367.1126	-0.0007
3	2	1	0	2	2	3	1	2	0	2	2	16385.7068	0.0014

Table S5: Observed Transition Frequencies (in MHz) for CH₂¹³C³⁷ClF

3	2	1	0	3	3	3	1	2	0	3	3	16395.8559	0.0029
2	2	0	0	1	1	2	1	1	0	2	2	17473.5313	-0.0030
2	2	0	0	2	2	2	1	1	0	1	1	17479.8758	0.0002
2	2	0	0	4	3	2	1	1	0	4	3	17481.3271	-0.0003
2	2	0	0	4	4	2	1	1	0	4	4	17481.3426	-0.0011
2	2	0	0	4	3	2	1	1	0	3	2	17488.9472	0.0061
2	2	0	0	4	4	2	1	1	0	3	3	17488.9641	0.0021
2	2	0	0	2	1	2	1	1	0	3	2	17492.9345	-0.0024
2	2	0	0	2	2	2	1	1	0	3	3	17492.9439	-0.0010
2	2	0	0	3	2	2	1	1	0	4	3	17495.3053	-0.0038
2	2	0	0	3	3	2	1	1	0	4	4	17495.3159	-0.0019
2	2	0	0	3	3	2	1	1	0	2	2	17497.4971	0.0032
2	2	0	0	3	2	2	1	1	0	3	2	17502.9247	0.0019
2	2	0	0	3	3	2	1	1	0	3	3	17502.9368	0.0007
2	1	1	0	3	3	1	1	0	0	2	2	18193.1704	0.0010
2	1	1	0	2	2	1	1	0	0	2	2	18198.6084	-0.0032
2	1	1	0	3	2	1	1	0	0	3	2	18199.9185	0.0001
2	1	1	0	3	3	1	1	0	0	3	3	18199.9185	-0.0008
2	1	1	0	4	4	1	1	0	0	3	3	18207.5412	0.0035
2	1	1	0	2	2	1	1	0	0	1	1	18210.7800	-0.0029
2	1	1	0	1	1	1	1	0	0	1	1	18218.4090	-0.0009
3	0	3	0	4	3	2	1	2	0	4	3	19429.5092	-0.0022
3	0	3	0	4	4	2	1	2	0	4	4	19429.5092	-0.0027
3	0	3	0	4	3	2	1	2	0	3	2	19436.2642	0.0044
3	0	3	0	4	4	2	1	2	0	3	3	19436.2642	0.0009
3	0	3	0	3	2	2	1	2	0	2	1	19437.7230	0.0003
3	0	3	0	3	3	2	1	2	0	2	2	19437.7279	0.0004
3	0	3	0	3	2	2	1	2	0	3	2	19442.5529	-0.0012
3	0	3	0	3	3	2	1	2	0	3	3	19442.5529	-0.0039
3	0	3	0	5	4	2	1	2	0	4	3	19442.9886	0.0052
3	0	3	0	5	5	2	1	2	0	4	4	19442.9886	0.0030
3	0	3	0	2	2	2	1	2	0	1	1	19444.4269	-0.0038
3	0	3	0	2	2	2	1	2	0	2	2	19451.1900	-0.0023
2	1	2	0	2	1	1	0	1	0	1	0	20788.5870	-0.0020
2	1	2	0	2	2	1	0	1	0	1	1	20788.6042	-0.0011
2	1	2	0	3	2	1	0	1	0	3	2	20795.2758	0.0020
2	1	2	0	3	3	1	0	1	0	3	3	20795.2758	-0.0040
2	1	2	0	1	0	1	0	1	0	1	1	20795.3507	-0.0013
2	1	2	0	1	1	1	0	1	0	1	1	20795.3642	-0.0027
2	1	2	0	4	3	1	0	1	0	3	2	20802.0206	-0.0017
2	1	2	0	4	4	1	0	1	0	3	3	20802.0342	0.0029
2	1	2	0	3	2	1	0	1	0	2	1	20809.6479	0.0004
2	1	2	0	3	3	1	0	1	0	2	2	20809.6605	0.0025

Table S6: Observed Transition Frequencies (in MHz) for $^{13}\text{CH}_2\text{C}^{37}\text{ClF}$

J'	K_a'	K_c'	s'	nm_1'	nm_2'	J''	K_a''	K_c''	s''	nm_1''	nm_2''	Observed	Obs - Calc
1	1	0	0	1	1	1	0	1	0	1	1	7022.2421	-0.0005
1	1	0	0	2	2	1	0	1	0	1	1	7034.4118	0.0022
1	1	0	0	3	2	1	0	1	0	3	2	7039.1932	-0.0007
1	1	0	0	3	3	1	0	1	0	3	3	7039.2007	-0.0024
1	1	0	0	2	2	1	0	1	0	3	3	7045.9496	-0.0030
1	1	0	0	2	1	1	0	1	0	3	2	7045.9496	-0.0030
1	1	0	0	1	1	1	0	1	0	2	2	7048.2118	0.0000
1	1	0	0	3	2	1	0	1	0	2	1	7053.6204	0.0043
1	1	0	0	3	3	1	0	1	0	2	2	7053.6297	0.0004
1	0	1	0	3	3	0	0	0	0	2	2	8199.1578	0.0042
1	0	1	0	1	1	0	0	0	0	2	2	8210.6944	-0.0022
2	1	1	0	2	2	2	0	2	0	1	1	8889.2340	0.0011
2	1	1	0	3	2	2	0	2	0	4	3	8893.7401	-0.0024
2	1	1	0	3	3	2	0	2	0	4	4	8893.7401	-0.0053
2	1	1	0	1	0	2	0	2	0	1	1	8896.8923	-0.0001
2	1	1	0	1	1	2	0	2	0	1	1	8896.9096	-0.0006
2	1	1	0	1	1	2	0	2	0	1	0	8896.9215	-0.0008
2	1	1	0	3	2	2	0	2	0	2	1	8897.7289	0.0038
2	1	1	0	3	3	2	0	2	0	2	2	8897.7360	0.0039
2	1	1	0	4	3	2	0	2	0	4	3	8901.4058	-0.0006
2	1	1	0	4	4	2	0	2	0	4	4	8901.4135	0.0006
2	1	1	0	2	1	2	0	2	0	2	1	8903.2101	0.0042
2	1	1	0	2	2	2	0	2	0	2	2	8903.2101	-0.0004
2	1	1	0	3	2	2	0	2	0	3	2	8907.7313	0.0041
2	1	1	0	3	3	2	0	2	0	3	3	8907.7313	-0.0012
2	1	1	0	1	0	2	0	2	0	2	1	8910.8781	-0.0016
2	1	1	0	1	1	2	0	2	0	2	2	8910.8862	-0.0016
2	1	1	0	2	1	2	0	2	0	3	2	8913.2074	-0.0007
2	1	1	0	2	2	2	0	2	0	3	3	8913.2074	-0.0035
2	1	1	0	4	4	2	0	2	0	3	3	8915.3970	-0.0030
3	1	2	0	4	4	2	2	1	0	3	3	10296.2390	0.0021
3	1	2	0	4	3	2	2	1	0	3	2	10296.2390	-0.0040
3	1	2	0	3	3	2	2	1	0	2	2	10311.7297	-0.0005
3	1	2	0	3	2	2	2	1	0	2	1	10311.7297	-0.0031
2	0	2	0	3	2	1	1	1	0	2	1	10610.0048	0.0041
2	0	2	0	3	3	1	1	1	0	2	2	10610.0048	-0.0005
2	0	2	0	3	2	1	1	1	0	3	2	10617.6732	-0.0036
2	0	2	0	3	3	1	1	1	0	3	3	10617.6732	0.0004
2	0	2	0	2	1	1	1	1	0	2	1	10620.0050	0.0022
2	0	2	0	2	2	1	1	1	0	2	2	10620.0050	-0.0007
2	0	2	0	2	2	1	1	1	0	3	3	10627.6710	-0.0022
2	0	2	0	4	3	1	1	1	0	3	2	10631.6635	0.0020
2	0	2	0	4	4	1	1	1	0	3	3	10631.6635	0.0035

Table S6: Observed Transition Frequencies (in MHz) for $^{13}\text{CH}_2\text{C}^{37}\text{ClF}$

2	0	2	0	2	1	1	1	1	0	1	0	10633.8005	-0.0007
2	0	2	0	2	2	1	1	1	0	1	1	10633.8183	-0.0011
2	0	2	0	1	1	1	1	1	0	2	2	10633.9819	-0.0014
2	0	2	0	1	0	1	1	1	0	1	1	10647.7837	-0.0013
2	0	2	0	1	1	1	1	1	0	1	0	10647.7837	-0.0048
2	0	2	0	1	1	1	1	1	0	1	1	10647.7945	-0.0026
3	1	2	0	3	2	3	0	3	0	2	1	12145.0033	0.0062
3	1	2	0	3	3	3	0	3	0	2	2	12145.0033	0.0031
3	1	2	0	4	3	3	0	3	0	5	4	12146.0815	-0.0009
3	1	2	0	4	4	3	0	3	0	5	5	12146.0815	-0.0042
3	1	2	0	4	4	3	0	3	0	3	3	12153.2549	0.0021
3	1	2	0	2	1	3	0	3	0	2	1	12156.1110	0.0041
3	1	2	0	2	2	3	0	3	0	2	2	12156.1110	-0.0011
3	1	2	0	5	4	3	0	3	0	5	4	12157.1856	-0.0024
3	1	2	0	5	5	3	0	3	0	5	5	12157.1940	0.0006
3	1	2	0	3	2	3	0	3	0	3	2	12158.4365	0.0034
3	1	2	0	3	3	3	0	3	0	3	3	12158.4365	-0.0014
3	1	2	0	4	3	3	0	3	0	4	3	12159.5337	0.0036
3	1	2	0	4	4	3	0	3	0	4	4	12159.5337	-0.0014
3	1	2	0	3	2	3	0	3	0	4	3	12164.7151	-0.0011
3	1	2	0	3	3	3	0	3	0	4	4	12164.7151	-0.0050
3	1	2	0	2	1	3	0	3	0	3	2	12169.5429	0.0000
3	1	2	0	2	2	3	0	3	0	3	3	12169.5429	-0.0069
3	1	2	0	5	5	3	0	3	0	4	4	12170.6448	0.0020
1	1	1	0	1	1	0	0	0	0	2	2	13663.5862	-0.0022
1	1	1	0	1	0	0	0	0	0	2	1	13663.5912	-0.0058
1	1	1	0	3	2	0	0	0	0	2	1	13669.7189	-0.0004
1	1	1	0	3	3	0	0	0	0	2	2	13669.7356	0.0010
1	1	1	0	2	1	0	0	0	0	2	1	13677.3977	0.0024
1	1	1	0	2	2	0	0	0	0	2	2	13677.3977	-0.0045
2	1	2	0	3	3	1	1	1	0	2	2	14813.0970	0.0025
2	1	2	0	2	1	1	1	1	0	2	1	14817.9162	-0.0005
2	1	2	0	2	2	1	1	1	0	2	2	14817.9225	-0.0003
2	1	2	0	3	2	1	1	1	0	3	2	14820.7615	-0.0008
2	1	2	0	3	3	1	1	1	0	3	3	14820.7615	-0.0005
2	1	2	0	4	3	1	1	1	0	3	2	14827.5140	0.0051
2	1	2	0	4	4	1	1	1	0	3	3	14827.5140	0.0021
2	1	2	0	2	1	1	1	1	0	1	0	14831.7172	0.0021
2	1	2	0	2	2	1	1	1	0	1	1	14831.7357	-0.0008
2	1	2	0	1	0	1	1	1	0	1	1	14838.4808	0.0004
2	1	2	0	1	1	1	1	1	0	1	0	14838.4808	-0.0071
2	1	2	0	1	1	1	1	1	0	1	1	14838.4945	-0.0020
4	2	2	0	6	6	4	1	3	0	6	6	15453.3596	-0.0002
4	2	2	0	5	4	4	1	3	0	5	4	15458.5244	0.0047

Table S6: Observed Transition Frequencies (in MHz) for $^{13}\text{CH}_2\text{C}^{37}\text{ClF}$

4	2	2	0	5	5	4	1	3	0	5	5	15458.5244	-0.0026
3	2	1	0	5	5	3	1	2	0	5	5	15667.1623	-0.0038
3	2	1	0	3	3	3	1	2	0	3	3	15672.5653	0.0010
3	2	1	0	4	4	3	1	2	0	4	4	15677.2978	0.0007
2	0	2	0	2	2	1	0	1	0	1	1	16086.7123	0.0010
2	0	2	0	3	2	1	0	1	0	3	2	16088.2497	0.0000
2	0	2	0	3	3	1	0	1	0	3	3	16088.2497	-0.0041
2	0	2	0	1	1	1	0	1	0	1	1	16100.6867	-0.0022
2	0	2	0	4	3	1	0	1	0	3	2	16102.2376	0.0032
2	0	2	0	4	4	1	0	1	0	3	3	16102.2435	0.0025
2	0	2	0	3	3	1	0	1	0	2	2	16102.6840	0.0039
2	0	2	0	2	2	1	0	1	0	2	2	16112.6824	0.0020
2	2	0	0	1	1	2	1	1	0	1	1	16694.5916	-0.0027
2	2	0	0	1	0	2	1	1	0	2	1	16702.2570	0.0025
2	2	0	0	1	1	2	1	1	0	2	2	16702.2716	0.0000
2	2	0	0	2	2	2	1	1	0	1	1	16708.5750	0.0010
2	2	0	0	4	3	2	1	1	0	4	3	16710.0555	-0.0038
2	2	0	0	4	4	2	1	1	0	4	4	16710.0721	-0.0026
2	2	0	0	2	2	2	1	1	0	2	2	16716.2523	0.0010
2	2	0	0	4	4	2	1	1	0	3	3	16717.7440	0.0018
2	2	0	0	2	1	2	1	1	0	3	2	16721.7268	0.0053
2	2	0	0	2	2	2	1	1	0	3	3	16721.7268	-0.0029
2	2	0	0	3	2	2	1	1	0	4	3	16724.0494	-0.0030
2	2	0	0	3	2	2	1	1	0	3	2	16731.7178	0.0014
2	2	0	0	3	3	2	1	1	0	3	3	16731.7309	0.0018
2	1	1	0	3	3	1	1	0	0	2	2	17950.0306	-0.0032
2	1	1	0	2	2	1	1	0	0	2	2	17955.5094	-0.0027
2	1	1	0	3	2	1	1	0	0	3	2	17956.7842	0.0012
2	1	1	0	3	3	1	1	0	0	3	3	17956.7842	0.0009
2	1	1	0	4	3	1	1	0	0	3	2	17964.4572	0.0103
2	1	1	0	4	4	1	1	0	0	3	3	17964.4572	0.0064
2	1	1	0	2	2	1	1	0	0	1	1	17967.6790	-0.0001
2	1	1	0	1	1	1	1	0	0	1	1	17975.3548	-0.0016
3	0	3	0	4	3	2	1	2	0	4	3	19275.2700	-0.0033
3	0	3	0	4	4	2	1	2	0	4	4	19275.2700	-0.0035
3	0	3	0	4	3	2	1	2	0	3	2	19282.0257	0.0058
3	0	3	0	4	4	2	1	2	0	3	3	19282.0257	0.0024
3	0	3	0	3	3	2	1	2	0	2	2	19283.4783	0.0010
3	0	3	0	3	2	2	1	2	0	3	2	19288.3021	-0.0009
3	0	3	0	3	3	2	1	2	0	3	3	19288.3021	-0.0034
3	0	3	0	5	4	2	1	2	0	4	3	19288.7258	0.0048
3	0	3	0	5	5	2	1	2	0	4	4	19288.7258	0.0030
3	0	3	0	2	2	2	1	2	0	1	1	19290.1528	-0.0022
3	0	3	0	2	2	2	1	2	0	2	2	19296.9152	0.0002

Table S6: Observed Transition Frequencies (in MHz) for $^{13}\text{CH}_2\text{C}^{37}\text{ClF}$

2	1	2	0	2	1	1	0	1	0	1	0	20284.6108	-0.0006
2	1	2	0	2	2	1	0	1	0	1	1	20284.6280	-0.0003
2	1	2	0	3	2	1	0	1	0	3	2	20291.3369	0.0017
2	1	2	0	3	3	1	0	1	0	3	3	20291.3369	-0.0062
2	1	2	0	1	0	1	0	1	0	1	1	20291.3718	-0.0005
2	1	2	0	1	1	1	0	1	0	1	1	20291.3873	-0.0010
2	1	2	0	4	4	1	0	1	0	3	3	20298.0950	0.0021
2	1	2	0	3	2	1	0	1	0	2	1	20305.7586	0.0012
2	1	2	0	3	3	1	0	1	0	2	2	20305.7734	0.0041
2	1	2	0	2	1	1	0	1	0	2	1	20310.5862	-0.0017
2	1	2	0	2	2	1	0	1	0	2	2	20310.5981	0.0006

Table S7: Observed Transition Frequencies (in MHz) for (*E*)-CHDC³⁵ClF

J'	K_a'	K_c'	s'	m_1'	m_2'	J''	K_a''	K_c''	s''	m_1''	m_2''	Observed	Obs - Calc
1	1	0	1	16	0	1	0	1	1	11	1	7080.7277	-0.0016
1	1	0	1	8	2	1	0	1	1	8	2	7080.7318	-0.0008
1	1	0	1	8	2	1	0	1	1	13	1	7080.7318	-0.0009
1	1	0	1	13	1	1	0	1	1	8	2	7080.7318	-0.0008
1	1	0	1	11	1	1	0	1	1	11	1	7080.7401	0.0037
1	1	0	1	11	1	1	0	1	1	16	0	7080.7401	0.0002
1	1	0	1	5	2	1	0	1	1	11	1	7096.1600	0.0008
1	1	0	1	5	2	1	0	1	1	8	2	7096.1650	0.0024
1	1	0	1	3	3	1	0	1	1	8	2	7096.1712	0.0033
1	1	0	1	10	1	1	0	1	1	11	1	7096.1864	0.0056
1	1	0	1	10	1	1	0	1	1	16	0	7096.1864	0.0021
1	1	0	1	7	2	1	0	1	1	8	2	7096.1898	0.0015
1	1	0	1	7	2	1	0	1	1	13	1	7096.1898	0.0014
1	1	0	1	4	2	1	0	1	1	4	2	7102.2177	0.0002
1	1	0	1	2	3	1	0	1	1	2	3	7102.2226	-0.0005
1	1	0	1	1	3	1	0	1	1	1	3	7102.2788	-0.0011
1	1	0	1	0	4	1	0	1	1	0	4	7102.2844	-0.0012
1	1	0	1	9	1	1	0	1	1	9	1	7102.3043	-0.0009
1	1	0	1	6	2	1	0	1	1	6	2	7102.3100	-0.0018
1	1	0	0	2	3	1	0	1	0	3	3	7110.8027	-0.0015
1	1	0	0	2	2	1	0	1	0	3	3	7110.8222	-0.0029
1	1	0	0	2	3	1	0	1	0	3	4	7110.8402	-0.0036
1	1	0	0	2	2	1	0	1	0	3	2	7110.8789	-0.0027
1	1	0	1	13	1	1	0	1	1	12	1	7113.6828	-0.0017
1	1	0	1	13	1	1	0	1	1	15	0	7113.6884	0.0016
1	1	0	1	11	1	1	0	1	1	15	0	7113.6942	0.0002
1	1	0	1	8	2	1	0	1	1	3	3	7113.7135	-0.0007
1	1	0	1	8	2	1	0	1	1	5	2	7113.7206	0.0040
1	1	0	1	11	1	1	0	1	1	5	2	7113.7249	0.0011
1	1	0	1	8	2	1	0	1	1	7	2	7113.7513	-0.0010
1	1	0	1	13	1	1	0	1	1	7	2	7113.7513	-0.0010
1	1	0	1	11	1	1	0	1	1	10	1	7113.7573	-0.0042
1	1	0	1	9	1	1	0	1	1	15	0	7120.5602	-0.0006
1	1	0	1	2	3	1	0	1	1	3	3	7120.5663	-0.0022
1	1	0	1	6	2	1	0	1	1	12	1	7120.5734	0.0026
1	1	0	1	1	3	1	0	1	1	5	2	7120.5870	0.0044
1	1	0	1	0	4	1	0	1	1	3	3	7120.5941	0.0024
1	1	0	1	4	2	1	0	1	1	10	1	7120.6011	0.0035
1	1	0	1	2	3	1	0	1	1	7	2	7120.6093	0.0027
1	1	0	1	9	1	1	0	1	1	10	1	7120.6285	0.0002
1	1	0	1	6	2	1	0	1	1	7	2	7120.6419	0.0033
1	1	0	1	12	1	1	0	1	1	12	1	7129.1038	0.0018
1	1	0	1	7	2	1	0	1	1	12	1	7129.1367	-0.0035

Table S7: Observed Transition Frequencies (in MHz) for (*E*)-CHDC³⁵ClF

1	1	0	1	5	2	1	0	1	1	5	2	7129.1475	0.0008
1	1	0	1	3	3	1	0	1	1	3	3	7129.1518	0.0023
1	1	0	1	7	2	1	0	1	1	7	2	7129.2084	0.0004
1	0	1	0	2	2	0	0	0	0	2	2	8131.7001	-0.0011
1	0	1	0	2	3	0	0	0	0	2	3	8131.7381	-0.0008
1	0	1	0	2	1	0	0	0	0	2	1	8131.7680	-0.0010
1	0	1	0	2	1	0	0	0	0	2	2	8131.7680	-0.0011
1	0	1	1	9	1	0	0	0	1	9	0	8150.0221	-0.0008
1	0	1	1	6	2	0	0	0	1	6	1	8150.0303	0.0017
1	0	1	1	1	3	0	0	0	1	1	2	8150.0439	0.0037
1	0	1	1	0	4	0	0	0	1	0	3	8150.0486	0.0026
1	0	1	1	4	2	0	0	0	1	4	1	8150.0861	0.0061
1	0	1	1	2	3	0	0	0	1	2	2	8150.0895	0.0041
1	0	1	0	1	2	0	0	0	0	2	3	8164.7198	-0.0026
2	1	1	1	16	1	2	0	2	1	21	0	8911.2566	0.0032
2	1	1	1	20	0	2	0	2	1	19	1	8911.2566	0.0032
2	1	1	1	11	2	2	0	2	1	17	1	8911.2665	0.0030
2	1	1	1	8	3	2	0	2	1	14	2	8911.2665	0.0011
2	1	1	0	3	4	2	0	2	0	4	4	8916.9685	-0.0016
2	1	1	0	3	3	2	0	2	0	4	4	8916.9745	-0.0046
2	1	1	0	3	4	2	0	2	0	4	5	8917.0155	-0.0060
2	1	1	0	3	2	2	0	2	0	4	3	8917.0265	-0.0061
2	1	1	1	17	1	2	0	2	1	21	0	8921.0148	0.0018
2	1	1	1	14	2	2	0	2	1	19	1	8921.0272	-0.0006
2	1	1	1	14	2	2	0	2	1	14	2	8921.0272	-0.0007
2	1	1	1	19	1	2	0	2	1	14	2	8921.0272	-0.0007
2	1	1	1	21	0	2	0	2	1	17	1	8921.0371	-0.0008
2	1	1	1	12	2	2	0	2	1	18	1	8922.0667	-0.0003
2	1	1	1	5	3	2	0	2	1	11	2	8922.0718	0.0027
2	1	1	1	3	4	2	0	2	1	8	3	8922.0780	0.0032
2	1	1	1	10	2	2	0	2	1	16	1	8922.0879	0.0060
2	1	1	1	7	3	2	0	2	1	13	2	8922.0879	0.0044
2	1	1	1	4	3	2	0	2	1	4	3	8926.7300	0.0001
2	1	1	1	2	4	2	0	2	1	2	4	8926.7355	0.0009
2	1	1	1	1	4	2	0	2	1	1	4	8926.7573	0.0000
2	1	1	1	0	5	2	0	2	1	0	5	8926.7622	-0.0006
2	1	1	1	6	3	2	0	2	1	6	3	8926.7698	-0.0005
2	1	1	1	11	2	2	0	2	1	8	3	8929.0295	-0.0008
2	1	1	1	20	0	2	0	2	1	18	1	8929.0295	-0.0010
2	1	1	1	11	2	2	0	2	1	11	2	8929.0379	-0.0005
2	1	1	1	8	3	2	0	2	1	8	3	8929.0423	0.0001
2	1	1	1	8	3	2	0	2	1	11	2	8929.0507	0.0004
2	1	1	1	18	1	2	0	2	1	20	0	8929.0507	0.0003
2	1	1	1	3	4	2	0	2	1	7	3	8934.7829	-0.0019

Table S7: Observed Transition Frequencies (in MHz) for (*E*)-CHDC³⁵CIF

2	1	1	1	10	2	2	0	2	1	10	2	8934.7916	-0.0005
2	1	1	1	7	3	2	0	2	1	7	3	8934.7916	-0.0020
2	1	1	1	5	3	2	0	2	1	5	3	8934.7999	0.0001
2	1	1	1	3	4	2	0	2	1	3	4	8934.8046	0.0003
2	1	1	1	7	3	2	0	2	1	3	4	8934.8162	0.0030
2	1	1	1	17	1	2	0	2	1	11	2	8938.7957	-0.0022
2	1	1	1	14	2	2	0	2	1	8	3	8938.8028	-0.0019
2	1	1	1	21	0	2	0	2	1	16	1	8938.8086	-0.0041
2	1	1	1	19	1	2	0	2	1	20	0	8938.8086	-0.0043
2	1	1	1	16	1	2	0	2	1	10	2	8941.7450	-0.0035
2	1	1	1	13	2	2	0	2	1	7	3	8941.7496	-0.0026
2	1	1	1	11	2	2	0	2	1	5	3	8941.7657	-0.0033
2	1	1	1	8	3	2	0	2	1	3	4	8941.7684	-0.0033
2	1	1	1	18	1	2	0	2	1	12	2	8941.7782	-0.0031
2	1	1	1	1	4	2	0	2	1	5	3	8944.5430	0.0056
2	1	1	1	0	5	2	0	2	1	3	4	8944.5504	0.0055
2	1	1	1	2	4	2	0	2	1	7	3	8944.5551	0.0069
3	1	2	0	4	4	3	1	3	0	5	5	9210.6640	-0.0048
3	1	2	0	4	5	3	1	3	0	5	6	9210.6794	-0.0074
3	1	2	0	4	3	3	1	3	0	5	4	9210.6794	-0.0095
3	1	2	1	16	2	3	1	3	1	21	1	9211.1813	-0.0006
3	1	2	1	13	3	3	1	3	1	19	2	9211.1872	0.0014
3	1	2	1	8	4	3	1	3	1	14	3	9211.1955	0.0019
3	1	2	1	5	4	3	1	3	1	11	3	9217.6092	0.0045
3	1	2	1	10	3	3	1	3	1	16	2	9217.6132	0.0054
3	1	2	1	3	5	3	1	3	1	8	4	9217.6132	0.0037
3	1	2	1	12	3	3	1	3	1	18	2	9217.6183	0.0062
3	1	2	1	7	4	3	1	3	1	13	3	9217.6183	0.0056
3	1	2	1	5	4	3	1	3	1	5	4	9223.6847	0.0003
3	1	2	1	7	4	3	1	3	1	7	4	9223.6847	0.0007
3	1	2	1	12	3	3	1	3	1	12	3	9223.6882	-0.0008
3	1	2	1	3	5	3	1	3	1	3	5	9223.6882	-0.0001
3	1	2	0	3	3	3	1	3	0	3	3	9224.2044	0.0016
3	1	2	0	3	4	3	1	3	0	3	4	9224.2065	0.0005
3	1	2	0	5	5	3	1	3	0	5	5	9224.8059	0.0034
3	1	2	0	5	6	3	1	3	0	5	6	9224.8108	0.0023
3	1	2	0	2	3	3	1	3	0	2	3	9225.3260	-0.0004
3	1	2	0	2	2	3	1	3	0	2	3	9225.3514	-0.0011
3	1	2	0	3	3	3	1	3	0	4	4	9230.2693	-0.0055
3	1	2	0	3	4	3	1	3	0	4	5	9230.2807	-0.0047
3	1	2	0	5	6	3	1	3	0	4	5	9237.8118	0.0035
3	1	2	0	5	4	3	1	3	0	4	3	9237.8118	0.0029
3	1	2	0	5	5	3	1	3	0	4	4	9237.8183	0.0023
3	1	2	0	2	1	3	1	3	0	3	2	9238.3332	0.0030

Table S7: Observed Transition Frequencies (in MHz) for (*E*)-CHDC³⁵ClF

3	1	2	0	2	3	3	1	3	0	3	4	9238.3378	-0.0026
3	1	2	0	4	3	2	2	1	0	3	2	9843.1116	0.0031
3	1	2	0	4	5	2	2	1	0	3	4	9843.1264	0.0008
3	1	2	0	4	3	2	2	1	0	3	3	9843.1344	-0.0029
3	1	2	1	10	3	2	2	1	1	10	2	9843.1704	-0.0056
3	1	2	1	7	4	2	2	1	1	7	3	9843.1787	0.0001
3	1	2	1	11	3	2	2	1	1	5	3	9849.7193	-0.0017
3	1	2	1	8	4	2	2	1	1	3	4	9849.7193	-0.0039
3	1	2	1	16	2	2	2	1	1	10	2	9849.7665	-0.0033
3	1	2	1	13	3	2	2	1	1	7	3	9849.7665	-0.0037
3	1	2	1	12	3	2	2	1	1	6	3	9861.4188	0.0006
3	1	2	1	15	2	2	2	1	1	9	2	9861.4252	-0.0007
3	1	2	1	3	5	2	2	1	1	0	5	9861.4413	-0.0013
3	1	2	1	5	4	2	2	1	1	1	4	9861.4485	0.0002
3	1	2	1	7	4	2	2	1	1	2	4	9861.5232	-0.0004
3	1	2	1	10	3	2	2	1	1	4	3	9861.5288	-0.0013
3	1	2	0	3	4	2	2	1	0	2	3	9862.8217	0.0004
3	1	2	0	3	3	2	2	1	0	2	2	9862.8428	-0.0002
3	1	2	0	5	4	2	2	1	0	4	3	9875.5507	0.0077
3	1	2	0	5	6	2	2	1	0	4	5	9875.5716	0.0043
3	1	2	0	5	5	2	2	1	0	4	4	9875.6659	0.0067
3	1	2	1	17	2	2	2	1	1	11	2	9876.9525	-0.0029
3	1	2	1	14	3	2	2	1	1	8	3	9876.9525	-0.0040
3	1	2	1	19	2	2	2	1	1	13	2	9876.9776	-0.0039
3	1	2	1	22	1	2	2	1	1	19	1	9895.2538	-0.0003
3	1	2	1	14	3	2	2	1	1	14	2	9895.2776	-0.0026
3	1	2	1	17	2	2	2	1	1	17	1	9895.2832	-0.0008
3	1	2	1	19	2	2	2	1	1	14	2	9895.3031	-0.0021
3	1	2	1	19	2	2	2	1	1	19	1	9895.3031	-0.0021
2	0	2	1	5	3	1	1	1	1	5	2	10428.6890	0.0015
2	0	2	1	3	4	1	1	1	1	3	3	10428.6932	0.0012
2	0	2	1	7	3	1	1	1	1	7	2	10428.6960	0.0009
2	0	2	1	12	2	1	1	1	1	12	1	10428.6960	-0.0010
2	0	2	0	3	2	1	1	1	0	3	2	10438.4180	-0.0002
2	0	2	0	3	4	1	1	1	0	3	4	10438.4332	-0.0013
2	0	2	0	3	3	1	1	1	0	3	3	10438.4725	0.0003
2	0	2	0	2	2	1	1	1	0	2	2	10441.4035	-0.0001
2	0	2	0	2	3	1	1	1	0	2	3	10441.4202	-0.0002
2	0	2	0	2	1	1	1	1	0	2	1	10441.4348	0.0010
2	0	2	0	2	2	1	1	1	0	2	1	10441.4348	0.0007
2	0	2	1	18	1	1	1	1	1	6	2	10451.1519	-0.0041
2	0	2	1	8	3	1	1	1	1	0	4	10451.1596	-0.0036
2	0	2	1	11	2	1	1	1	1	1	3	10451.1622	-0.0031
2	0	2	1	13	2	1	1	1	1	2	3	10451.1789	-0.0036

Table S7: Observed Transition Frequencies (in MHz) for (*E*)-CHDC³⁵CIF

2	0	2	1	16	1	1	1	1	1	4	2	10451.1789	-0.0050
2	0	2	0	4	3	1	1	1	0	3	2	10456.1989	0.0061
2	0	2	0	4	5	1	1	1	0	3	4	10456.2210	0.0055
2	0	2	0	4	4	1	1	1	0	3	3	10456.2914	0.0067
2	0	2	1	11	2	1	1	1	1	11	1	10458.9625	0.0004
2	0	2	1	20	0	1	1	1	1	13	1	10458.9708	0.0025
2	0	2	1	16	1	1	1	1	1	16	0	10458.9708	0.0023
2	0	2	1	8	3	1	1	1	1	8	2	10458.9772	0.0007
2	0	2	1	17	1	1	1	1	1	10	1	10459.1713	-0.0041
2	0	2	1	14	2	1	1	1	1	7	2	10459.1789	-0.0029
2	0	2	1	19	1	1	1	1	1	7	2	10459.1789	-0.0030
2	0	2	1	17	1	1	1	1	1	5	2	10459.1904	-0.0026
2	0	2	1	14	2	1	1	1	1	3	3	10459.1956	-0.0028
2	0	2	1	19	1	1	1	1	1	12	1	10459.2102	-0.0028
2	0	2	1	17	1	1	1	1	1	11	1	10476.7427	0.0058
2	0	2	1	17	1	1	1	1	1	16	0	10476.7461	0.0029
2	0	2	1	21	0	1	1	1	1	11	1	10476.7461	-0.0010
2	0	2	1	14	2	1	1	1	1	8	2	10476.7524	-0.0009
2	0	2	1	14	2	1	1	1	1	13	1	10476.7524	-0.0009
2	0	2	1	19	1	1	1	1	1	8	2	10476.7524	-0.0010
3	1	2	1	18	2	3	0	3	1	19	2	12092.9386	0.0043
3	1	2	1	16	2	3	0	3	1	21	1	12092.9644	0.0015
3	1	2	1	13	3	3	0	3	1	19	2	12092.9705	0.0030
3	1	2	1	11	3	3	0	3	1	17	2	12092.9802	0.0020
3	1	2	1	8	4	3	0	3	1	14	3	12092.9846	0.0023
3	1	2	1	18	2	3	0	3	1	22	1	12093.0037	0.0007
3	1	2	0	4	4	3	0	3	0	5	5	12094.3469	-0.0053
3	1	2	0	4	5	3	0	3	0	5	6	12094.3724	-0.0082
3	1	2	0	4	3	3	0	3	0	5	4	12094.3779	-0.0071
3	1	2	0	4	4	3	0	3	0	3	3	12103.4971	0.0026
3	1	2	0	4	5	3	0	3	0	3	4	12103.5036	0.0066
3	1	2	0	4	3	3	0	3	0	3	2	12103.5101	0.0083
3	1	2	1	22	1	3	0	3	1	19	2	12107.0529	-0.0016
3	1	2	1	17	2	3	0	3	1	21	1	12107.0712	-0.0010
3	1	2	1	19	2	3	0	3	1	19	2	12107.1046	-0.0010
3	1	2	1	17	2	3	0	3	1	17	2	12107.1107	-0.0006
3	1	2	1	14	3	3	0	3	1	14	3	12107.1156	-0.0009
3	1	2	1	22	1	3	0	3	1	22	1	12107.1246	0.0014
3	1	2	1	21	1	3	0	3	1	17	2	12107.1398	-0.0017
3	1	2	1	19	2	3	0	3	1	14	3	12107.1398	-0.0017
3	1	2	1	19	2	3	0	3	1	22	1	12107.1750	0.0007
3	1	2	1	4	4	3	0	3	1	4	4	12108.4830	-0.0002
3	1	2	1	2	5	3	0	3	1	2	5	12108.4895	0.0012
3	1	2	1	1	5	3	0	3	1	1	5	12108.4999	0.0006

Table S7: Observed Transition Frequencies (in MHz) for (*E*)-CHDC³⁵ClF

3	1	2	1	0	6	3	0	3	1	0	6	12108.5039	-0.0009
3	1	2	1	6	4	3	0	3	1	6	4	12108.5087	0.0005
3	1	2	1	16	2	3	0	3	1	16	2	12110.0841	-0.0014
3	1	2	1	13	3	3	0	3	1	13	3	12110.0879	-0.0010
3	1	2	1	11	3	3	0	3	1	11	3	12110.0933	0.0002
3	1	2	1	8	4	3	0	3	1	8	4	12110.0975	-0.0004
3	1	2	1	10	3	3	0	3	1	10	3	12111.4911	-0.0009
3	1	2	1	7	4	3	0	3	1	7	4	12111.4960	-0.0002
3	1	2	1	5	4	3	0	3	1	5	4	12111.5033	0.0006
3	1	2	1	3	5	3	0	3	1	3	5	12111.5074	-0.0003
3	1	2	1	12	3	3	0	3	1	12	3	12111.5109	0.0004
3	1	2	0	3	3	3	0	3	0	4	4	12118.0817	-0.0049
3	1	2	0	3	4	3	0	3	0	4	5	12118.1006	-0.0038
3	1	2	0	3	2	3	0	3	0	4	3	12118.1006	-0.0063
3	1	2	1	22	1	3	0	3	1	18	2	12124.2161	-0.0044
3	1	2	1	17	2	3	0	3	1	11	3	12124.2231	-0.0031
3	1	2	1	19	2	3	0	3	1	13	3	12124.2231	-0.0039
3	1	2	1	14	3	3	0	3	1	8	4	12124.2288	-0.0033
3	1	2	1	1	5	3	0	3	1	5	4	12125.6312	0.0076
3	1	2	1	4	4	3	0	3	1	10	3	12125.6312	0.0070
3	1	2	1	0	6	3	0	3	1	3	5	12125.6399	0.0093
3	1	2	1	2	5	3	0	3	1	7	4	12125.6399	0.0088
1	1	1	1	8	2	0	0	0	1	0	3	13701.5128	-0.0017
1	1	1	1	11	1	0	0	0	1	1	2	13701.5178	-0.0031
1	1	1	1	4	2	0	0	0	1	4	1	13709.2986	-0.0007
1	1	1	1	2	3	0	0	0	1	2	2	13709.3130	0.0042
1	1	1	1	1	3	0	0	0	1	1	2	13709.3174	-0.0003
1	1	1	1	0	4	0	0	0	1	0	3	13709.3288	0.0010
1	1	1	1	6	2	0	0	0	1	6	1	13709.3391	0.0042
1	1	1	1	5	2	0	0	0	1	1	2	13719.0649	0.0000
1	1	1	1	3	3	0	0	0	1	0	3	13719.0693	-0.0002
1	1	1	1	10	1	0	0	0	1	4	1	13719.0863	0.0038
1	1	1	1	7	2	0	0	0	1	2	2	13719.0863	0.0002
2	1	2	0	3	3	1	1	1	0	2	2	14736.0430	-0.0023
2	1	2	0	3	4	1	1	1	0	2	3	14736.0488	-0.0023
2	1	2	0	3	2	1	1	1	0	2	1	14736.0561	-0.0036
2	1	2	0	3	3	1	1	1	0	2	3	14736.0676	0.0054
2	1	2	1	13	2	1	1	1	1	7	2	14742.1685	-0.0013
2	1	2	1	11	2	1	1	1	1	5	2	14742.1796	-0.0016
2	1	2	1	8	3	1	1	1	1	3	3	14742.1854	-0.0009
2	1	2	1	5	3	1	1	1	1	1	3	14745.7945	0.0000
2	1	2	1	3	4	1	1	1	1	0	4	14745.7945	-0.0012
2	1	2	1	7	3	1	1	1	1	0	4	14745.8107	0.0042
2	1	2	1	12	2	1	1	1	1	2	3	14745.8107	0.0028

Table S7: Observed Transition Frequencies (in MHz) for (*E*)-CHDC³⁵CIF

2	1	2	1	7	3	1	1	1	1	2	3	14745.8247	-0.0009
2	1	2	1	10	2	1	1	1	1	4	2	14745.8247	-0.0011
2	1	2	1	17	1	1	1	1	1	10	1	14750.7395	-0.0031
2	1	2	1	14	2	1	1	1	1	7	2	14750.7486	-0.0026
2	1	2	1	19	1	1	1	1	1	7	2	14750.7486	-0.0026
2	1	2	1	17	1	1	1	1	1	5	2	14750.7560	-0.0041
2	1	2	1	14	2	1	1	1	1	3	3	14750.7652	-0.0025
2	1	2	1	19	1	1	1	1	1	12	1	14750.7765	-0.0058
2	1	2	0	2	1	1	1	1	0	3	2	14751.9167	-0.0047
2	1	2	0	2	3	1	1	1	0	3	4	14751.9253	-0.0038
2	1	2	0	2	2	1	1	1	0	3	3	14751.9439	-0.0030
2	1	2	1	9	2	1	1	1	1	9	1	14754.3378	0.0029
2	1	2	1	6	3	1	1	1	1	6	2	14754.3400	0.0027
2	1	2	1	1	4	1	1	1	1	1	3	14754.3538	0.0039
2	1	2	1	0	5	1	1	1	1	0	4	14754.3587	0.0051
2	1	2	1	4	3	1	1	1	1	4	2	14754.4013	0.0037
2	1	2	1	2	4	1	1	1	1	2	3	14754.4055	0.0045
2	1	2	1	11	2	1	1	1	1	11	1	14759.7257	0.0006
2	1	2	1	16	1	1	1	1	1	16	0	14759.7341	0.0027
2	1	2	1	20	0	1	1	1	1	13	1	14759.7341	0.0026
2	1	2	1	8	3	1	1	1	1	8	2	14759.7421	0.0008
2	1	2	1	17	1	1	1	1	1	11	1	14768.3101	0.0060
2	1	2	1	17	1	1	1	1	1	16	0	14768.3101	-0.0003
2	1	2	1	21	0	1	1	1	1	11	1	14768.3157	-0.0007
2	1	2	1	14	2	1	1	1	1	8	2	14768.3223	-0.0004
2	1	2	1	14	2	1	1	1	1	13	1	14768.3223	-0.0004
2	1	2	1	19	1	1	1	1	1	8	2	14768.3223	-0.0005
4	2	2	1	13	4	4	1	3	1	19	3	15621.5081	0.0049
4	2	2	1	11	4	4	1	3	1	17	3	15621.5236	0.0042
4	2	2	1	8	5	4	1	3	1	14	4	15621.5278	0.0043
4	2	2	1	18	3	4	1	3	1	22	2	15621.5377	-0.0033
4	2	2	1	19	3	4	1	3	1	19	3	15630.4734	-0.0002
4	2	2	1	21	2	4	1	3	1	21	2	15630.4734	-0.0005
4	2	2	1	17	3	4	1	3	1	17	3	15630.4863	-0.0002
4	2	2	1	14	4	4	1	3	1	14	4	15630.4923	0.0004
4	2	2	1	22	2	4	1	3	1	22	2	15630.4958	0.0017
4	2	2	1	23	1	4	1	3	1	23	1	15630.4958	0.0013
4	2	2	1	2	6	4	1	3	1	2	6	15632.7971	-0.0008
4	2	2	1	1	6	4	1	3	1	1	6	15632.8136	-0.0010
4	2	2	1	9	4	4	1	3	1	9	4	15632.8189	0.0002
4	2	2	1	0	7	4	1	3	1	0	7	15632.8189	-0.0011
4	2	2	0	5	5	4	1	3	0	4	4	15633.9784	0.0038
4	2	2	0	5	6	4	1	3	0	4	5	15633.9936	0.0047
4	2	2	0	5	4	4	1	3	0	4	3	15633.9983	0.0036

Table S7: Observed Transition Frequencies (in MHz) for (*E*)-CHDC³⁵ClF

4	2	2	1	13	4	4	1	3	1	13	4	15637.1143	-0.0007
4	2	2	1	11	4	4	1	3	1	11	4	15637.1261	-0.0002
4	2	2	1	8	5	4	1	3	1	8	5	15637.1315	0.0001
4	2	2	1	7	5	4	1	3	1	7	5	15639.4499	-0.0004
4	2	2	1	5	5	4	1	3	1	5	5	15639.4625	-0.0008
4	2	2	1	15	3	4	1	3	1	15	3	15639.4678	0.0003
4	2	2	1	3	6	4	1	3	1	3	6	15639.4678	-0.0006
4	2	2	1	12	4	4	1	3	1	12	4	15639.4772	0.0010
4	2	2	1	11	4	4	1	3	1	5	5	15642.5975	-0.0060
4	2	2	1	8	5	4	1	3	1	3	6	15642.6010	-0.0070
4	2	2	1	19	3	4	1	3	1	13	4	15646.0795	-0.0059
4	2	2	1	21	2	4	1	3	1	16	3	15646.0795	-0.0064
4	2	2	1	17	3	4	1	3	1	11	4	15646.0903	-0.0030
4	2	2	1	22	2	4	1	3	1	18	3	15646.0903	-0.0040
4	2	2	1	14	4	4	1	3	1	8	5	15646.0963	-0.0035
4	2	2	1	1	6	4	1	3	1	5	5	15648.4160	0.0012
4	2	2	1	0	7	4	1	3	1	3	6	15648.4225	0.0009
3	2	1	1	16	2	3	1	2	1	21	1	15899.6637	0.0040
3	2	1	1	13	3	3	1	2	1	19	2	15899.6748	0.0043
3	2	1	1	11	3	3	1	2	1	17	2	15899.6926	0.0032
3	2	1	1	8	4	3	1	2	1	14	3	15899.6992	0.0043
3	2	1	1	18	2	3	1	2	1	22	1	15899.7221	0.0012
3	2	1	1	19	2	3	1	2	1	19	2	15900.8877	0.0012
3	2	1	1	17	2	3	1	2	1	17	2	15900.9034	0.0004
3	2	1	1	14	3	3	1	2	1	14	3	15900.9124	0.0016
3	2	1	1	10	3	3	1	2	1	4	4	15905.7024	-0.0065
3	2	1	1	7	4	3	1	2	1	2	5	15905.7070	-0.0075
3	2	1	1	5	4	3	1	2	1	1	5	15905.7413	-0.0073
3	2	1	1	3	5	3	1	2	1	0	6	15905.7460	-0.0074
3	2	1	1	12	3	3	1	2	1	6	4	15905.7561	-0.0070
3	2	1	1	4	4	3	1	2	1	4	4	15906.8960	-0.0005
3	2	1	1	2	5	3	1	2	1	2	5	15906.9033	-0.0012
3	2	1	1	1	5	3	1	2	1	1	5	15906.9342	-0.0018
3	2	1	1	0	6	3	1	2	1	0	6	15906.9417	-0.0014
3	2	1	1	6	4	3	1	2	1	6	4	15906.9518	-0.0010
3	2	1	1	10	3	3	1	2	1	16	2	15913.2529	0.0056
3	2	1	1	7	4	3	1	2	1	13	3	15913.2641	0.0063
3	2	1	1	5	4	3	1	2	1	11	3	15913.2745	0.0041
3	2	1	1	3	5	3	1	2	1	8	4	15913.2835	0.0054
3	2	1	1	12	3	3	1	2	1	18	2	15913.2971	0.0072
3	2	1	1	16	2	3	1	2	1	16	2	15913.7995	0.0003
3	2	1	1	13	3	3	1	2	1	13	3	15913.8106	0.0020
3	2	1	1	11	3	3	1	2	1	11	3	15913.8223	-0.0002
3	2	1	1	8	4	3	1	2	1	8	4	15913.8301	0.0009

Table S7: Observed Transition Frequencies (in MHz) for (*E*)-CHDC³⁵CIF

3	2	1	1	18	2	3	1	2	1	18	2	15913.8436	0.0026
3	2	1	1	19	2	3	1	2	1	13	3	15915.0202	-0.0044
3	2	1	1	17	2	3	1	2	1	11	3	15915.0335	-0.0026
3	2	1	1	14	3	3	1	2	1	8	4	15915.0434	-0.0017
3	2	1	1	22	1	3	1	2	1	18	2	15915.0581	0.0013
3	2	1	1	10	3	3	1	2	1	10	3	15919.8417	0.0006
3	2	1	1	7	4	3	1	2	1	7	4	15919.8500	0.0007
3	2	1	1	5	4	3	1	2	1	5	4	15919.8688	-0.0007
3	2	1	1	3	5	3	1	2	1	3	5	15919.8762	0.0000
3	2	1	1	12	3	3	1	2	1	12	3	15919.8867	0.0009
3	2	1	1	16	2	3	1	2	1	10	3	15920.3889	-0.0041
3	2	1	1	13	3	3	1	2	1	7	4	15920.3965	-0.0037
3	2	1	1	11	3	3	1	2	1	5	4	15920.4167	-0.0049
3	2	1	1	8	4	3	1	2	1	3	5	15920.4230	-0.0043
3	2	1	1	18	2	3	1	2	1	12	3	15920.4335	-0.0034
3	2	1	1	4	4	3	1	2	1	10	3	15921.0350	0.0062
3	2	1	1	2	5	3	1	2	1	7	4	15921.0458	0.0065
3	2	1	1	1	5	3	1	2	1	5	4	15921.0622	0.0054
3	2	1	1	0	6	3	1	2	1	3	5	15921.0719	0.0060
3	2	1	1	6	4	3	1	2	1	12	3	15921.0828	0.0073
2	0	2	1	11	2	1	0	1	1	11	1	15995.7577	-0.0004
2	0	2	1	8	3	1	0	1	1	8	2	15995.7706	0.0011
2	0	2	0	3	3	1	0	1	0	3	3	15997.6938	-0.0007
2	0	2	0	3	4	1	0	1	0	3	4	15997.7113	-0.0028
2	0	2	0	3	2	1	0	1	0	3	2	15997.7226	0.0002
2	0	2	0	2	2	1	0	1	0	3	3	16010.4002	-0.0050
2	0	2	0	2	3	1	0	1	0	3	4	16010.4396	-0.0049
2	0	2	0	2	1	1	0	1	0	3	2	16010.4564	-0.0049
2	0	2	1	17	1	1	0	1	1	11	1	16013.5353	0.0024
2	0	2	1	14	2	1	0	1	1	8	2	16013.5454	-0.0009
2	0	2	1	14	2	1	0	1	1	13	1	16013.5454	-0.0010
2	0	2	1	19	1	1	0	1	1	8	2	16013.5454	-0.0010
2	0	2	1	1	4	1	0	1	1	1	3	16015.4955	0.0033
2	0	2	1	0	5	1	0	1	1	0	4	16015.5020	0.0044
2	0	2	1	6	3	1	0	1	1	6	2	16015.5020	0.0026
2	0	2	1	4	3	1	0	1	1	4	2	16015.5091	0.0050
2	0	2	1	2	4	1	0	1	1	2	3	16015.5151	0.0057
2	0	2	1	12	2	1	0	1	1	12	1	16015.9852	0.0029
2	0	2	1	5	3	1	0	1	1	5	2	16016.0164	0.0015
2	0	2	1	3	4	1	0	1	1	3	3	16016.0242	0.0026
2	0	2	1	10	2	1	0	1	1	10	1	16016.0759	0.0029
2	0	2	1	7	3	1	0	1	1	7	2	16016.0835	0.0042
2	0	2	1	18	1	1	0	1	1	12	1	16028.7210	-0.0003
2	0	2	1	13	2	1	0	1	1	12	1	16028.7210	-0.0006

Table S7: Observed Transition Frequencies (in MHz) for (*E*)-CHDC³⁵CIF

2	0	2	1	11	2	1	0	1	1	5	2	16028.7440	-0.0015
2	0	2	1	8	3	1	0	1	1	3	3	16028.7508	-0.0003
2	0	2	1	11	2	1	0	1	1	10	1	16028.7809	-0.0022
2	0	2	1	16	1	1	0	1	1	10	1	16028.7809	-0.0023
2	0	2	1	13	2	1	0	1	1	7	2	16028.7894	0.0000
2	0	2	1	19	1	1	0	1	1	12	1	16046.4968	-0.0015
2	0	2	1	17	1	1	0	1	1	5	2	16046.5183	-0.0021
2	0	2	1	14	2	1	0	1	1	3	3	16046.5263	-0.0017
2	0	2	1	17	1	1	0	1	1	10	1	16046.5563	-0.0017
2	0	2	1	14	2	1	0	1	1	7	2	16046.5651	-0.0009
2	0	2	1	19	1	1	0	1	1	7	2	16046.5651	-0.0010
4	1	3	1	16	3	4	0	4	1	21	2	16885.1867	0.0009
4	1	3	1	13	4	4	0	4	1	19	3	16885.1942	0.0034
4	1	3	1	11	4	4	0	4	1	17	3	16885.2013	0.0019
4	1	3	1	8	5	4	0	4	1	14	4	16885.2062	0.0019
4	1	3	1	18	3	4	0	4	1	22	2	16885.2209	0.0061
4	1	3	0	5	5	4	0	4	0	6	6	16885.5275	-0.0057
4	1	3	0	5	6	4	0	4	0	6	7	16885.5427	-0.0104
4	1	3	0	5	4	4	0	4	0	6	5	16885.5427	-0.0123
4	1	3	1	10	4	4	0	4	1	16	3	16896.2906	0.0049
4	1	3	1	5	5	4	0	4	1	11	4	16896.2967	0.0066
4	1	3	1	7	5	4	0	4	1	13	4	16896.2967	0.0049
4	1	3	1	3	6	4	0	4	1	8	5	16896.3006	0.0043
4	1	3	1	12	4	4	0	4	1	18	3	16896.3063	0.0060
4	1	3	1	21	2	4	0	4	1	21	2	16900.7945	-0.0033
4	1	3	1	19	3	4	0	4	1	19	3	16900.8005	-0.0021
4	1	3	1	17	3	4	0	4	1	17	3	16900.8005	-0.0057
4	1	3	1	14	4	4	0	4	1	14	4	16900.8098	-0.0023
4	1	3	1	4	5	4	0	4	1	4	5	16901.1383	-0.0012
4	1	3	1	2	6	4	0	4	1	2	6	16901.1443	-0.0009
4	1	3	1	1	6	4	0	4	1	1	6	16901.1511	0.0005
4	1	3	1	9	4	4	0	4	1	9	4	16901.1511	-0.0016
4	1	3	1	0	7	4	0	4	1	0	7	16901.1577	0.0010
4	1	3	1	6	5	4	0	4	1	6	5	16901.1577	-0.0008
4	1	3	1	16	3	4	0	4	1	16	3	16901.7576	-0.0020
4	1	3	1	13	4	4	0	4	1	13	4	16901.7633	-0.0012
4	1	3	1	11	4	4	0	4	1	11	4	16901.7633	-0.0040
4	1	3	1	8	5	4	0	4	1	8	5	16901.7719	-0.0011
4	1	3	1	18	3	4	0	4	1	18	3	16901.7719	-0.0028
4	1	3	1	10	4	4	0	4	1	10	4	16902.0934	-0.0021
4	1	3	1	7	5	4	0	4	1	7	5	16902.0997	-0.0010
4	1	3	1	5	5	4	0	4	1	5	5	16902.1045	0.0001
4	1	3	1	15	3	4	0	4	1	15	3	16902.1045	-0.0020
4	1	3	1	3	6	4	0	4	1	3	6	16902.1102	0.0001

Table S7: Observed Transition Frequencies (in MHz) for (*E*)-CHDC³⁵CIF

4	1	3	1	12	4	4	0	4	1	12	4	16902.1102	-0.0016
4	1	3	0	3	2	4	0	4	0	4	3	16917.3688	-0.0056
4	1	3	0	3	3	4	0	4	0	4	4	16917.3688	-0.0054
4	1	3	0	3	4	4	0	4	0	4	5	16917.3746	-0.0037
4	1	3	1	1	6	4	0	4	1	5	5	16917.7123	0.0077
4	1	3	1	0	7	4	0	4	1	3	6	16917.7202	0.0084
2	2	0	1	14	2	2	1	1	1	19	1	16945.6315	0.0006
2	2	0	1	19	1	2	1	1	1	14	2	16945.6315	0.0005
2	2	0	1	14	2	2	1	1	1	14	2	16945.6315	0.0005
2	2	0	1	21	0	2	1	1	1	17	1	16945.6451	-0.0006
2	2	0	1	17	1	2	1	1	1	11	2	16955.3799	-0.0018
2	2	0	1	14	2	2	1	1	1	8	3	16955.3923	-0.0012
2	2	0	1	21	0	2	1	1	1	16	1	16955.4028	-0.0024
2	2	0	1	19	1	2	1	1	1	20	0	16955.4028	-0.0025
2	2	0	1	11	2	2	1	1	1	17	1	16963.4075	0.0021
2	2	0	1	8	3	2	1	1	1	14	2	16963.4125	0.0030
2	2	0	1	4	3	2	1	1	1	4	3	16965.2527	0.0003
2	2	0	1	2	4	2	1	1	1	2	4	16965.2606	-0.0012
2	2	0	1	1	4	2	1	1	1	1	4	16965.3248	-0.0040
2	2	0	1	0	5	2	1	1	1	0	5	16965.3359	-0.0018
2	2	0	1	6	3	2	1	1	1	6	3	16965.3572	-0.0031
2	2	0	1	11	2	2	1	1	1	11	2	16973.1649	0.0000
2	2	0	1	8	3	2	1	1	1	8	3	16973.1732	0.0012
2	2	0	1	2	4	2	1	1	1	7	3	16975.0189	0.0024
2	2	0	1	1	4	2	1	1	1	5	3	16975.0702	0.0038
2	2	0	1	0	5	2	1	1	1	3	4	16975.0819	0.0036
2	2	0	1	9	2	2	1	1	1	15	1	16975.0924	0.0082
2	2	0	1	6	3	2	1	1	1	12	2	16975.1007	0.0000
2	2	0	1	13	2	2	1	1	1	7	3	16980.1263	-0.0042
2	2	0	1	11	2	2	1	1	1	5	3	16980.1320	-0.0022
2	2	0	1	8	3	2	1	1	1	3	4	16980.1378	-0.0015
2	2	0	1	10	2	2	1	1	1	4	3	16983.0699	-0.0045
2	2	0	1	7	3	2	1	1	1	2	4	16983.0804	-0.0036
2	2	0	1	5	3	2	1	1	1	1	4	16983.1072	-0.0070
2	2	0	1	3	4	2	1	1	1	0	5	16983.1187	-0.0046
2	2	0	1	15	1	2	1	1	1	9	2	16983.1345	0.0010
2	2	0	1	12	2	2	1	1	1	6	3	16983.1345	-0.0047
2	2	0	1	3	4	2	1	1	1	8	3	16985.8997	0.0032
2	2	0	1	12	2	2	1	1	1	18	1	16985.9088	0.0045
2	2	0	1	10	2	2	1	1	1	10	2	16992.8232	-0.0002
2	2	0	1	5	3	2	1	1	1	5	3	16992.8496	-0.0022
2	2	0	1	3	4	2	1	1	1	3	4	16992.8642	0.0003
2	2	0	1	15	1	2	1	1	1	15	1	16992.8707	0.0026
2	2	0	1	12	2	2	1	1	1	12	2	16992.8735	-0.0061

Table S7: Observed Transition Frequencies (in MHz) for (*E*)-CHDC³⁵ClF

2	1	1	1	10	2	1	1	0	1	10	1	17821.6595	0.0002
2	1	1	1	7	3	1	1	0	1	7	2	17821.6658	0.0009
2	1	1	1	5	3	1	1	0	1	5	2	17821.6710	0.0030
2	1	1	1	3	4	1	1	0	1	3	3	17821.6777	0.0012
2	1	1	1	15	1	1	1	0	1	15	0	17821.6840	0.0030
2	1	1	1	12	2	1	1	0	1	12	1	17821.6918	0.0055
2	1	1	1	16	1	1	1	0	1	7	2	17828.6100	-0.0015
2	1	1	1	11	2	1	1	0	1	10	1	17828.6141	-0.0016
2	1	1	1	16	1	1	1	0	1	10	1	17828.6141	-0.0016
2	1	1	1	13	2	1	1	0	1	7	2	17828.6227	-0.0008
2	1	1	1	11	2	1	1	0	1	5	2	17828.6351	-0.0021
2	1	1	1	8	3	1	1	0	1	3	3	17828.6417	-0.0022
2	1	1	1	13	2	1	1	0	1	12	1	17828.6576	-0.0041
2	1	1	1	18	1	1	1	0	1	12	1	17828.6576	-0.0040
2	1	1	0	3	4	1	1	0	0	3	4	17830.2339	0.0001
2	1	1	0	3	3	1	1	0	0	3	4	17830.2458	0.0029
2	1	1	0	3	2	1	1	0	0	3	3	17830.2526	0.0008
2	1	1	0	3	4	1	1	0	0	3	3	17830.2526	-0.0031
2	1	1	0	3	3	1	1	0	0	3	3	17830.2654	0.0006
2	1	1	0	2	1	1	1	0	0	3	2	17837.1881	-0.0050
2	1	1	0	2	3	1	1	0	0	3	4	17837.1982	-0.0043
2	1	1	0	2	2	1	1	0	0	3	3	17837.2193	-0.0052
2	1	1	1	14	2	1	1	0	1	7	2	17838.3828	-0.0031
2	1	1	1	19	1	1	1	0	1	7	2	17838.3828	-0.0032
2	1	1	1	21	0	1	1	0	1	10	1	17838.3888	-0.0013
2	1	1	1	14	2	1	1	0	1	3	3	17838.4016	-0.0047
2	1	1	1	14	2	1	1	0	1	5	2	17838.4076	-0.0040
2	1	1	1	19	1	1	1	0	1	12	1	17838.4184	-0.0058
2	1	1	1	1	4	1	1	0	1	1	3	17839.9730	0.0033
2	1	1	1	0	5	1	1	0	1	0	4	17839.9799	0.0051
2	1	1	1	4	3	1	1	0	1	4	2	17840.0203	0.0038
2	1	1	1	2	4	1	1	0	1	2	3	17840.0263	0.0053
2	1	1	1	11	2	1	1	0	1	11	1	17844.0623	0.0022
2	1	1	1	16	1	1	1	0	1	16	0	17844.0680	0.0008
2	1	1	1	20	0	1	1	0	1	13	1	17844.0680	0.0008
2	1	1	1	8	3	1	1	0	1	8	2	17844.0800	0.0008
2	1	1	1	17	1	1	1	0	1	16	0	17853.8257	-0.0010
2	1	1	1	21	0	1	1	0	1	11	1	17853.8330	-0.0015
2	1	1	1	14	2	1	1	0	1	13	1	17853.8408	-0.0008
2	1	1	1	14	2	1	1	0	1	8	2	17853.8408	-0.0009
2	1	1	1	19	1	1	1	0	1	8	2	17853.8408	-0.0009
3	0	3	0	4	3	2	1	2	0	4	3	19065.0873	-0.0024
3	0	3	0	4	5	2	1	2	0	4	5	19065.0908	-0.0023
3	0	3	0	4	4	2	1	2	0	4	4	19065.1031	-0.0008

Table S7: Observed Transition Frequencies (in MHz) for (*E*)-CHDC³⁵CIF

3	0	3	1	15	2	2	1	2	1	15	1	19073.6428	0.0018
3	0	3	1	12	3	2	1	2	1	12	2	19073.6510	0.0053
3	0	3	1	5	4	2	1	2	1	5	3	19073.6510	0.0030
3	0	3	1	3	5	2	1	2	1	3	4	19073.6551	0.0037
3	0	3	1	10	3	2	1	2	1	10	2	19073.6773	0.0022
3	0	3	1	7	4	2	1	2	1	7	3	19073.6829	0.0032
3	0	3	1	18	2	2	1	2	1	18	1	19075.5106	-0.0019
3	0	3	1	11	3	2	1	2	1	11	2	19075.5236	0.0007
3	0	3	1	8	4	2	1	2	1	8	3	19075.5285	0.0015
3	0	3	1	16	2	2	1	2	1	16	1	19075.5577	0.0033
3	0	3	1	13	3	2	1	2	1	13	2	19075.5577	0.0007
3	0	3	0	3	2	2	1	2	0	3	2	19081.6453	-0.0046
3	0	3	0	3	4	2	1	2	0	3	4	19081.6579	-0.0003
3	0	3	0	3	3	2	1	2	0	3	3	19081.6754	-0.0022
3	0	3	1	6	4	2	1	2	1	6	3	19082.2237	0.0086
3	0	3	1	1	5	2	1	2	1	1	4	19082.2237	0.0069
3	0	3	1	0	6	2	1	2	1	0	5	19082.2237	0.0045
3	0	3	1	4	4	2	1	2	1	4	3	19082.2494	0.0051
3	0	3	1	4	4	2	1	2	1	4	3	19082.2522	0.0079
3	0	3	1	2	5	2	1	2	1	2	4	19082.2522	0.0051
3	0	3	1	22	1	2	1	2	1	19	1	19084.0288	0.0005
3	0	3	1	17	2	2	1	2	1	14	2	19084.0425	-0.0041
3	0	3	1	17	2	2	1	2	1	17	1	19084.0602	0.0013
3	0	3	1	14	3	2	1	2	1	14	2	19084.0602	-0.0010
3	0	3	1	21	1	2	1	2	1	21	0	19084.0833	-0.0024
3	0	3	1	19	2	2	1	2	1	19	1	19084.0962	-0.0008
3	0	3	1	19	2	2	1	2	1	14	2	19084.0962	-0.0009
3	0	3	1	17	2	2	1	2	1	11	2	19092.6355	-0.0023
3	0	3	1	14	3	2	1	2	1	8	3	19092.6411	-0.0015
3	0	3	1	21	1	2	1	2	1	16	1	19092.6765	-0.0004
3	0	3	1	19	2	2	1	2	1	13	2	19092.6765	-0.0020
2	1	2	1	11	2	1	0	1	1	11	1	20296.5204	-0.0007
2	1	2	1	8	3	1	0	1	1	8	2	20296.5356	0.0013
2	1	2	0	2	2	1	0	1	0	3	3	20311.1648	-0.0044
2	1	2	0	2	3	1	0	1	0	3	4	20311.2045	-0.0042
2	1	2	1	6	3	1	0	1	1	2	3	20313.5892	0.0023
2	1	2	1	4	3	1	0	1	1	4	2	20313.6177	0.0008
2	1	2	1	2	4	1	0	1	1	2	3	20313.6255	0.0011
2	1	2	1	1	4	1	0	1	1	1	3	20313.6255	-0.0020
2	1	2	1	0	5	1	0	1	1	0	4	20313.6383	0.0030
2	1	2	1	6	3	1	0	1	1	6	2	20313.6490	0.0054
2	1	2	1	15	1	1	0	1	1	15	0	20323.3415	0.0018
2	1	2	1	12	2	1	0	1	1	12	1	20323.3509	0.0039
2	1	2	1	5	3	1	0	1	1	5	2	20323.3764	0.0017

Table S7: Observed Transition Frequencies (in MHz) for (*E*)-CHDC³⁵CIF

2	1	2	1	3	4	1	0	1	1	3	3	20323.3858	0.0022
2	1	2	1	10	2	1	0	1	1	10	1	20323.4276	0.0024
2	1	2	1	7	3	1	0	1	1	7	2	20323.4365	0.0040
2	1	2	1	13	2	1	0	1	1	12	1	20329.4870	0.0007
2	1	2	1	18	1	1	0	1	1	12	1	20329.4870	0.0008
2	1	2	1	11	2	1	0	1	1	5	2	20329.5070	-0.0016
2	1	2	1	8	3	1	0	1	1	3	3	20329.5158	-0.0002
2	1	2	1	11	2	1	0	1	1	10	1	20329.5442	-0.0020
2	1	2	1	16	1	1	0	1	1	10	1	20329.5442	-0.0020
2	1	2	1	13	2	1	0	1	1	7	2	20329.5536	-0.0004
2	1	2	1	10	2	1	0	1	1	4	2	20305.0470	0.0019
2	1	2	1	7	3	1	0	1	1	2	3	20305.0470	-0.0020
2	1	2	1	5	3	1	0	1	1	1	3	20305.0696	-0.0024
2	1	2	1	3	4	1	0	1	1	0	4	20305.0751	-0.0023
2	1	2	1	12	2	1	0	1	1	6	2	20305.0876	-0.0004
2	1	2	1	17	1	1	0	1	1	11	1	20305.1021	0.0020
2	1	2	1	17	1	1	0	1	1	16	0	20305.1021	-0.0015
2	1	2	1	14	2	1	0	1	1	8	2	20305.1149	-0.0008
2	1	2	1	19	1	1	0	1	1	8	2	20305.1149	-0.0009
2	1	2	1	14	2	1	0	1	1	13	1	20305.1149	-0.0009
2	1	2	1	17	1	1	0	1	1	15	0	20338.0569	-0.0008
2	1	2	1	19	1	1	0	1	1	12	1	20338.0679	0.0002
2	1	2	1	17	1	1	0	1	1	5	2	20338.0854	-0.0021
2	1	2	1	14	2	1	0	1	1	3	3	20338.0962	-0.0011
2	1	2	1	17	1	1	0	1	1	10	1	20338.1209	-0.0042
2	1	2	1	14	2	1	0	1	1	7	2	20338.1339	-0.0015
2	1	2	1	19	1	1	0	1	1	7	2	20338.1339	-0.0016
2	2	1	1	17	1	2	1	2	1	21	0	21295.8768	0.0029
2	2	1	1	14	2	2	1	2	1	19	1	21295.8969	-0.0005
2	2	1	1	19	1	2	1	2	1	14	2	21295.8969	-0.0006
2	2	1	1	14	2	2	1	2	1	14	2	21295.8969	-0.0006
2	2	1	1	21	0	2	1	2	1	17	1	21295.9098	0.0002
2	2	1	1	17	1	2	1	2	1	11	2	21304.4624	-0.0028
2	2	1	1	14	2	2	1	2	1	8	3	21304.4774	-0.0015
2	2	1	1	11	2	2	1	2	1	17	1	21314.2152	0.0005
2	2	1	1	8	3	2	1	2	1	14	2	21314.2234	0.0021
2	2	1	1	4	3	2	1	2	1	4	3	21315.0654	0.0002
2	2	1	1	2	4	2	1	2	1	2	4	21315.0767	-0.0002
2	2	1	1	1	4	2	1	2	1	1	4	21315.1454	-0.0016
2	2	1	1	0	5	2	1	2	1	0	5	21315.1570	-0.0016
2	2	1	1	6	3	2	1	2	1	6	3	21315.1789	-0.0035
2	2	1	1	11	2	2	1	2	1	11	2	21322.7931	-0.0006
2	2	1	1	8	3	2	1	2	1	8	3	21322.8038	0.0011
2	2	1	1	4	3	2	1	2	1	10	2	21323.6411	0.0042

Table S7: Observed Transition Frequencies (in MHz) for (*E*)-CHDC³⁵CIF

2	2	1	1	2	4	2	1	2	1	7	3	21323.6553	0.0030
2	2	1	1	1	4	2	1	2	1	5	3	21323.7078	0.0054
2	2	1	1	0	5	2	1	2	1	3	4	21323.7192	0.0026
2	2	1	1	13	2	2	1	2	1	7	3	21328.9211	-0.0030
2	2	1	1	11	2	2	1	2	1	5	3	21328.9211	-0.0064
2	2	1	1	8	3	2	1	2	1	3	4	21328.9338	-0.0012
2	2	1	1	18	1	2	1	2	1	12	2	21328.9420	0.0001
2	2	1	1	10	2	2	1	2	1	4	3	21333.4163	-0.0030
2	2	1	1	5	3	2	1	2	1	1	4	21333.4715	-0.0019
2	2	1	1	3	4	2	1	2	1	0	5	21333.4715	-0.0046
2	2	1	1	12	2	2	1	2	1	6	3	21333.4872	-0.0060
2	2	1	1	7	3	2	1	2	1	13	2	21335.8744	-0.0014
2	2	1	1	5	3	2	1	2	1	8	3	21335.8827	-0.0025
2	2	1	1	15	1	2	1	2	1	18	1	21335.8857	-0.0026
2	2	1	1	5	3	2	1	2	1	11	2	21335.8935	-0.0016
2	2	1	1	3	4	2	1	2	1	8	3	21335.9045	0.0028
2	2	1	1	12	2	2	1	2	1	18	1	21335.9142	0.0046
2	2	1	1	10	2	2	1	2	1	10	2	21341.9927	0.0016
2	2	1	1	5	3	2	1	2	1	5	3	21342.0283	-0.0006
2	2	1	1	3	4	2	1	2	1	3	4	21342.0349	0.0008
2	2	1	1	12	2	2	1	2	1	12	2	21342.0522	0.0034

Table S8: Observed Transition Frequencies (in MHz) for (Z)-CHDC³⁵ClF

J'	K_a'	K_c'	s'	m_1'	m_2'	J''	K_a''	K_c''	s''	m_1''	m_2''	Observed	Obs - Calc
1	1	0	1	16	0	1	0	1	1	11	1	6354.2785	-0.0015
1	1	0	1	8	2	1	0	1	1	8	2	6354.2827	-0.0009
1	1	0	1	8	2	1	0	1	1	13	1	6354.2827	-0.0009
1	1	0	1	13	1	1	0	1	1	8	2	6354.2827	-0.0009
1	1	0	1	11	1	1	0	1	1	16	0	6354.2908	0.0001
1	1	0	1	15	0	1	0	1	1	13	1	6369.7070	0.0007
1	1	0	1	12	1	1	0	1	1	13	1	6369.7147	0.0038
1	1	0	1	5	2	1	0	1	1	11	1	6369.7188	-0.0005
1	1	0	1	5	2	1	0	1	1	8	2	6369.7255	0.0026
1	1	0	1	3	3	1	0	1	1	8	2	6369.7305	0.0023
1	1	0	1	10	1	1	0	1	1	11	1	6369.7459	0.0056
1	1	0	1	10	1	1	0	1	1	16	0	6369.7459	0.0020
1	1	0	1	7	2	1	0	1	1	8	2	6369.7493	0.0013
1	1	0	1	7	2	1	0	1	1	13	1	6369.7493	0.0013
1	1	0	1	4	2	1	0	1	1	4	2	6375.7998	0.0007
1	1	0	1	2	3	1	0	1	1	2	3	6375.8043	-0.0005
1	1	0	1	1	3	1	0	1	1	1	3	6375.8108	-0.0017
1	1	0	1	0	4	1	0	1	1	0	4	6375.8165	-0.0020
1	1	0	1	6	2	1	0	1	1	6	2	6375.8229	-0.0010
1	1	0	1	0	4	1	0	1	1	2	3	6375.8269	-0.0005
1	1	0	1	9	1	1	0	1	1	4	2	6375.8269	-0.0020
1	1	0	1	6	2	1	0	1	1	9	1	6375.8269	-0.0033
1	1	0	0	2	1	1	0	1	0	3	2	6384.3573	-0.0054
1	1	0	0	2	3	1	0	1	0	3	4	6384.3774	-0.0048
1	1	0	0	2	2	1	0	1	0	3	3	6384.4073	-0.0030
1	1	0	1	8	2	1	0	1	1	7	2	6387.2411	-0.0026
1	1	0	1	13	1	1	0	1	1	7	2	6387.2411	-0.0026
1	1	0	1	8	2	1	0	1	1	3	3	6387.2508	-0.0001
1	1	0	1	13	1	1	0	1	1	12	1	6387.2572	-0.0004
1	1	0	1	11	1	1	0	1	1	5	2	6387.2632	0.0024
1	1	0	1	2	3	1	0	1	1	7	2	6394.1050	0.0024
1	1	0	1	1	3	1	0	1	1	5	2	6394.1281	0.0045
1	1	0	1	0	4	1	0	1	1	3	3	6394.1351	0.0026
1	1	0	1	6	2	1	0	1	1	12	1	6394.1500	0.0025
1	1	0	1	12	1	1	0	1	1	7	2	6402.6722	0.0012
1	1	0	1	15	0	1	0	1	1	12	1	6402.6756	-0.0047
1	1	0	1	5	2	1	0	1	1	10	1	6402.6812	-0.0040
1	1	0	1	12	1	1	0	1	1	12	1	6402.6812	-0.0037
1	1	0	1	3	3	1	0	1	1	7	2	6402.6843	-0.0040
1	1	0	1	5	2	1	0	1	1	5	2	6402.6932	0.0002
1	1	0	1	3	3	1	0	1	1	3	3	6402.6979	0.0023
1	1	0	1	7	2	1	0	1	1	7	2	6402.7091	0.0010
1	1	0	1	7	2	1	0	1	1	3	3	6402.7203	0.0049

Table S8: Observed Transition Frequencies (in MHz) for (Z)-CHDC³⁵ClF

1	1	0	1	7	2	1	0	1	1	12	1	6402.7221	0.0001
1	0	1	0	2	1	0	0	0	0	2	2	8389.8582	-0.0021
1	0	1	0	2	1	0	0	0	0	2	1	8389.8582	-0.0022
1	0	1	0	2	3	0	0	0	0	2	3	8389.8654	-0.0009
1	0	1	0	2	2	0	0	0	0	2	2	8389.8737	-0.0001
1	0	1	1	4	2	0	0	0	1	4	1	8408.1691	0.0018
1	0	1	1	2	3	0	0	0	1	2	2	8408.1748	0.0023
1	0	1	1	1	3	0	0	0	1	1	2	8408.1779	0.0020
1	0	1	1	9	1	0	0	0	1	9	0	8408.1809	0.0027
1	0	1	1	0	4	0	0	0	1	0	3	8408.1845	0.0031
1	0	1	1	6	2	0	0	0	1	6	1	8408.1882	0.0037
1	0	1	0	1	2	0	0	0	0	2	3	8422.8336	-0.0021
2	1	1	1	20	0	2	0	2	1	19	1	8518.1946	-0.0015
2	1	1	1	16	1	2	0	2	1	21	0	8518.1946	-0.0017
2	1	1	1	11	2	2	0	2	1	17	1	8518.1994	-0.0073
2	1	1	1	8	3	2	0	2	1	14	2	8518.2093	0.0005
2	1	1	0	3	3	2	0	2	0	4	4	8523.7273	-0.0067
2	1	1	0	3	3	2	0	2	0	4	3	8523.7354	0.0012
2	1	1	0	3	4	2	0	2	0	4	5	8523.7429	-0.0062
2	1	1	0	3	2	2	0	2	0	4	3	8523.7496	-0.0058
2	1	1	1	17	1	2	0	2	1	21	0	8527.9404	0.0027
2	1	1	1	14	2	2	0	2	1	14	2	8527.9528	-0.0006
2	1	1	1	14	2	2	0	2	1	19	1	8527.9528	-0.0006
2	1	1	1	19	1	2	0	2	1	14	2	8527.9528	-0.0006
2	1	1	1	21	0	2	0	2	1	17	1	8527.9630	-0.0010
2	1	1	1	10	2	2	0	2	1	16	1	8528.7079	0.0003
2	1	1	1	7	3	2	0	2	1	13	2	8528.7146	0.0044
2	1	1	1	5	3	2	0	2	1	11	2	8528.7263	0.0012
2	1	1	1	3	4	2	0	2	1	8	3	8528.7306	0.0023
2	1	1	1	12	2	2	0	2	1	18	1	8528.7374	0.0034
2	1	1	1	2	4	2	0	2	1	2	4	8533.4431	-0.0010
2	1	1	1	1	4	2	0	2	1	1	4	8533.4790	0.0007
2	1	1	1	0	5	2	0	2	1	0	5	8533.4826	-0.0008
2	1	1	1	6	3	2	0	2	1	6	3	8533.4945	0.0001
2	1	1	1	11	2	2	0	2	1	11	2	8535.6723	-0.0004
2	1	1	1	8	3	2	0	2	1	8	3	8535.6764	-0.0005
2	1	1	0	3	3	2	0	2	0	3	3	8541.2150	-0.0004
2	1	1	0	3	4	2	0	2	0	3	4	8541.2315	0.0011
2	1	1	0	3	2	2	0	2	0	3	2	8541.2383	0.0016
2	1	1	1	17	1	2	0	2	1	11	2	8545.4129	-0.0013
2	1	1	1	14	2	2	0	2	1	8	3	8545.4198	-0.0017
2	1	1	1	19	1	2	0	2	1	20	0	8545.4303	0.0004
2	1	1	1	21	0	2	0	2	1	16	1	8545.4303	0.0003
2	1	1	0	2	2	2	0	2	0	3	3	8548.1768	-0.0036

Table S8: Observed Transition Frequencies (in MHz) for (Z)-CHDC³⁵ClF

2	1	1	0	2	3	2	0	2	0	3	4	8548.1768	-0.0036
2	1	1	1	4	3	2	0	2	1	10	2	8550.9244	0.0045
2	1	1	1	2	4	2	0	2	1	7	3	8550.9318	0.0052
2	1	1	1	1	4	2	0	2	1	5	3	8550.9637	0.0051
2	1	1	1	0	5	2	0	2	1	3	4	8550.9711	0.0054
2	1	1	1	9	2	2	0	2	1	15	1	8550.9777	0.0085
2	1	1	1	6	3	2	0	2	1	12	2	8550.9819	0.0052
3	1	2	0	4	4	3	1	3	0	5	5	10404.6405	-0.0075
3	1	2	0	4	5	3	1	3	0	5	6	10404.7018	-0.0061
3	1	2	0	4	3	3	1	3	0	5	4	10404.7183	-0.0051
3	1	2	0	3	3	3	1	3	0	2	2	10405.1326	0.0047
3	1	2	0	3	4	3	1	3	0	2	3	10405.1737	0.0033
3	1	2	0	3	2	3	1	3	0	2	1	10405.1983	0.0022
3	1	2	1	10	3	3	1	3	1	16	2	10411.5471	0.0049
3	1	2	1	7	4	3	1	3	1	13	3	10411.5538	0.0050
3	1	2	1	5	4	3	1	3	1	11	3	10411.5949	0.0040
3	1	2	1	3	5	3	1	3	1	8	4	10411.5996	0.0037
3	1	2	1	12	3	3	1	3	1	18	2	10411.6172	0.0040
3	1	2	0	4	4	3	1	3	0	4	4	10417.5886	0.0010
3	1	2	0	4	5	3	1	3	0	4	5	10417.6377	-0.0004
3	1	2	0	4	3	3	1	3	0	4	3	10417.6566	0.0036
3	1	2	0	3	3	3	1	3	0	3	3	10418.0746	0.0000
3	1	2	0	3	4	3	1	3	0	3	4	10418.1145	0.0010
3	1	2	0	3	2	3	1	3	0	3	2	10418.1320	0.0018
3	1	2	0	5	5	3	1	3	0	5	5	10418.6102	0.0026
3	1	2	0	5	6	3	1	3	0	5	6	10418.6807	0.0011
3	1	2	1	21	1	3	1	3	1	21	1	10419.0949	-0.0001
3	1	2	1	19	2	3	1	3	1	19	2	10419.0949	-0.0027
3	1	2	1	19	2	3	1	3	1	14	3	10419.1194	0.0023
3	1	2	1	21	1	3	1	3	1	17	2	10419.1194	0.0007
3	1	2	1	14	3	3	1	3	1	19	2	10419.1319	0.0017
3	1	2	1	14	3	3	1	3	1	14	3	10419.1483	-0.0015
3	1	2	1	17	2	3	1	3	1	17	2	10419.1483	-0.0003
3	1	2	0	3	4	3	1	3	0	4	5	10424.1549	-0.0040
3	1	2	0	3	2	3	1	3	0	4	3	10424.1715	-0.0033
3	1	2	1	0	6	3	1	3	1	3	5	10431.6153	0.0018
3	1	2	1	9	3	3	1	3	1	15	2	10431.6214	-0.0001
3	1	2	1	21	1	3	1	3	1	16	2	10432.0415	-0.0007
3	1	2	1	19	2	3	1	3	1	13	3	10432.0415	-0.0022
3	1	2	1	19	2	3	1	3	1	18	2	10432.0669	-0.0027
3	1	2	1	14	3	3	1	3	1	13	3	10432.0737	-0.0026
3	1	2	1	17	2	3	1	3	1	11	3	10432.0876	-0.0032
3	1	2	1	14	3	3	1	3	1	8	4	10432.0876	-0.0052
3	1	2	1	23	0	3	1	3	1	20	1	10432.1082	-0.0056

Table S8: Observed Transition Frequencies (in MHz) for (Z)-CHDC³⁵ClF

3	1	2	1	22	1	3	1	3	1	18	2	10432.1157	-0.0052
2	0	2	1	12	2	1	1	1	1	12	1	11746.2892	0.0009
2	0	2	1	5	3	1	1	1	1	5	2	11746.3059	0.0019
2	0	2	1	3	4	1	1	1	1	3	3	11746.3117	0.0020
2	0	2	1	10	2	1	1	1	1	10	1	11746.3327	0.0012
2	0	2	1	7	3	1	1	1	1	7	2	11746.3396	0.0016
2	0	2	0	3	3	1	1	1	0	3	3	11756.0253	0.0000
2	0	2	0	3	4	1	1	1	0	3	4	11756.0544	0.0001
2	0	2	0	3	2	1	1	1	0	3	2	11756.0688	0.0021
2	0	2	1	13	2	1	1	1	1	12	1	11758.7897	-0.0026
2	0	2	1	18	1	1	1	1	1	12	1	11758.7897	-0.0027
2	0	2	1	11	2	1	1	1	1	5	2	11758.8126	0.0031
2	0	2	1	8	3	1	1	1	1	3	3	11758.8126	-0.0012
2	0	2	1	11	2	1	1	1	1	10	1	11758.8346	-0.0024
2	0	2	1	16	1	1	1	1	1	10	1	11758.8346	-0.0024
2	0	2	1	13	2	1	1	1	1	7	2	11758.8405	-0.0015
2	0	2	0	2	2	1	1	1	0	3	3	11768.5268	-0.0034
2	0	2	0	2	3	1	1	1	0	3	4	11768.5552	-0.0042
2	0	2	0	2	1	1	1	1	0	3	2	11768.5702	-0.0016
2	0	2	0	4	4	1	1	1	0	3	3	11773.5148	0.0082
2	0	2	0	4	5	1	1	1	0	3	4	11773.5421	0.0066
2	0	2	0	4	3	1	1	1	0	3	2	11773.5582	0.0103
2	0	2	1	19	1	1	1	1	1	12	1	11776.2576	-0.0029
2	0	2	1	17	1	1	1	1	1	5	2	11776.2741	-0.0015
2	0	2	1	14	2	1	1	1	1	3	3	11776.2794	-0.0025
2	0	2	1	17	1	1	1	1	1	10	1	11776.3025	-0.0006
2	0	2	1	11	2	1	1	1	1	11	1	11776.3329	0.0018
2	0	2	1	8	3	1	1	1	1	8	2	11776.3477	0.0023
2	0	2	1	17	1	1	1	1	1	16	0	11793.8042	0.0013
2	0	2	1	21	0	1	1	1	1	11	1	11793.8080	0.0004
2	0	2	1	14	2	1	1	1	1	13	1	11793.8139	0.0005
2	0	2	1	14	2	1	1	1	1	8	2	11793.8139	0.0004
2	0	2	1	19	1	1	1	1	1	8	2	11793.8139	0.0004
3	1	2	1	16	2	3	0	3	1	21	1	12350.4268	-0.0003
3	1	2	1	13	3	3	0	3	1	19	2	12350.4375	0.0038
3	1	2	1	11	3	3	0	3	1	17	2	12350.4699	0.0027
3	1	2	1	8	4	3	0	3	1	14	3	12350.4699	0.0014
3	1	2	0	4	4	3	0	3	0	5	5	12351.6561	-0.0090
3	1	2	0	4	5	3	0	3	0	5	6	12351.7010	-0.0069
3	1	2	0	4	3	3	0	3	0	5	4	12351.7171	-0.0024
3	1	2	1	7	4	3	0	3	1	13	3	12360.4947	0.0045
3	1	2	1	7	4	3	0	3	1	8	4	12360.5036	0.0059
3	1	2	1	5	4	3	0	3	1	11	3	12360.5274	0.0045
3	1	2	1	3	5	3	0	3	1	8	4	12360.5322	0.0040

Table S8: Observed Transition Frequencies (in MHz) for (Z)-CHDC³⁵ClF

3	1	2	1	12	3	3	0	3	1	18	2	12360.5419	0.0044
3	1	2	1	21	1	3	0	3	1	21	1	12364.3987	-0.0006
3	1	2	1	19	2	3	0	3	1	19	2	12364.4055	0.0015
3	1	2	1	19	2	3	0	3	1	14	3	12364.4147	0.0018
3	1	2	1	21	1	3	0	3	1	17	2	12364.4147	0.0004
3	1	2	1	14	3	3	0	3	1	19	2	12364.4340	-0.0026
3	1	2	1	17	2	3	0	3	1	17	2	12364.4443	0.0001
3	1	2	1	14	3	3	0	3	1	14	3	12364.4443	-0.0012
3	1	2	1	4	4	3	0	3	1	4	4	12365.6190	-0.0001
3	1	2	1	2	5	3	0	3	1	2	5	12365.6265	-0.0004
3	1	2	1	0	6	3	0	3	1	0	6	12365.6788	-0.0038
3	1	2	1	6	4	3	0	3	1	6	4	12365.6934	-0.0035
3	1	2	1	16	2	3	0	3	1	16	2	12367.0155	0.0002
3	1	2	1	13	3	3	0	3	1	13	3	12367.0155	0.0008
3	1	2	1	13	3	3	0	3	1	8	4	12367.0269	0.0047
3	1	2	1	13	3	3	0	3	1	18	2	12367.0269	0.0033
3	1	2	1	13	3	3	0	3	1	16	2	12367.0338	0.0028
3	1	2	1	11	3	3	0	3	1	8	4	12367.0338	0.0022
3	1	2	1	11	3	3	0	3	1	11	3	12367.0463	0.0004
3	1	2	1	8	4	3	0	3	1	8	4	12367.0463	-0.0019
3	1	2	1	20	1	3	0	3	1	20	1	12367.0576	0.0027
3	1	2	1	18	2	3	0	3	1	18	2	12367.0576	-0.0005
3	1	2	1	10	3	3	0	3	1	10	3	12368.2181	-0.0053
3	1	2	1	7	4	3	0	3	1	7	4	12368.2255	-0.0002
3	1	2	1	5	4	3	0	3	1	5	4	12368.2618	0.0004
3	1	2	1	15	2	3	0	3	1	15	2	12368.2735	0.0025
3	1	2	1	12	3	3	0	3	1	12	3	12368.2735	-0.0016
3	1	2	1	3	5	3	0	3	1	5	4	12368.2821	0.0012
3	1	2	1	13	3	3	0	3	1	7	4	12374.7460	-0.0042
3	1	2	1	16	2	3	0	3	1	10	3	12374.7460	-0.0052
3	1	2	1	13	3	3	0	3	1	5	4	12374.7794	0.0045
3	1	2	1	8	4	3	0	3	1	3	5	12374.7794	-0.0064
3	1	2	1	20	1	3	0	3	1	15	2	12374.7913	-0.0015
3	1	2	1	18	2	3	0	3	1	12	3	12374.7913	-0.0043
3	1	2	1	19	2	3	0	3	1	13	3	12380.9835	-0.0015
3	1	2	1	21	1	3	0	3	1	16	2	12380.9835	-0.0039
3	1	2	1	17	2	3	0	3	1	11	3	12381.0212	-0.0016
3	1	2	1	14	3	3	0	3	1	8	4	12381.0212	-0.0039
3	1	2	1	4	4	3	0	3	1	10	3	12382.1837	0.0017
3	1	2	1	2	5	3	0	3	1	7	4	12382.1942	0.0068
3	1	2	1	0	6	3	0	3	1	3	5	12382.2402	0.0015
3	1	2	1	6	4	3	0	3	1	12	3	12382.2465	-0.0024
1	1	1	1	8	2	0	0	0	1	0	3	13029.3107	-0.0021
1	1	1	1	11	1	0	0	0	1	1	2	13029.3151	-0.0036

Table S8: Observed Transition Frequencies (in MHz) for (Z)-CHDC³⁵ClF

1	1	1	1	9	1	0	0	0	1	9	0	13037.0783	0.0012
1	1	1	1	6	2	0	0	0	1	6	1	13037.0874	0.0007
1	1	1	1	1	3	0	0	0	1	1	2	13037.0940	0.0041
1	1	1	1	0	4	0	0	0	1	0	3	13037.1032	0.0031
1	1	1	1	4	2	0	0	0	1	4	1	13037.1205	0.0009
1	1	1	1	2	3	0	0	0	1	2	2	13037.1301	0.0013
1	1	1	0	2	2	0	0	0	0	2	2	13046.8167	0.0017
1	1	1	0	2	3	0	0	0	0	2	3	13046.8446	0.0020
1	1	1	0	2	1	0	0	0	0	2	1	13046.8670	0.0022
1	1	1	0	2	1	0	0	0	0	2	2	13046.8670	0.0022
3	2	1	1	8	4	3	1	2	1	14	3	13475.6867	0.0028
3	2	1	1	16	2	3	1	2	1	21	1	13475.6968	0.0049
3	2	1	1	20	1	3	1	2	1	21	1	13475.7109	0.0004
3	2	1	1	18	2	3	1	2	1	19	2	13475.7217	0.0002
3	2	1	0	2	2	3	1	2	0	2	3	13477.4253	0.0003
3	2	1	0	2	1	3	1	2	0	2	1	13477.4347	0.0010
3	2	1	0	2	3	3	1	2	0	2	3	13477.4444	0.0027
3	2	1	0	2	1	3	1	2	0	2	2	13477.4858	0.0041
3	2	1	1	9	3	3	1	2	1	9	3	13483.1306	-0.0015
3	2	1	1	1	5	3	1	2	1	1	5	13483.1306	-0.0017
3	2	1	1	6	4	3	1	2	1	6	4	13483.1368	-0.0010
3	2	1	1	0	6	3	1	2	1	0	6	13483.1397	-0.0014
3	2	1	1	4	4	3	1	2	1	4	4	13483.1500	-0.0006
3	2	1	0	4	3	3	1	2	0	3	2	13488.8501	0.0008
3	2	1	0	4	4	3	1	2	0	3	3	13488.8610	0.0035
3	2	1	1	11	3	3	1	2	1	11	3	13489.6510	0.0004
3	2	1	1	8	4	3	1	2	1	8	4	13489.6614	0.0005
3	2	1	1	16	2	3	1	2	1	16	2	13489.6654	0.0014
3	2	1	1	13	3	3	1	2	1	13	3	13489.6754	0.0011
3	2	1	1	17	2	3	1	2	1	11	3	13491.4034	-0.0027
3	2	1	1	14	3	3	1	2	1	8	4	13491.4192	-0.0015
3	2	1	1	19	2	3	1	2	1	13	3	13491.4326	-0.0005
3	2	1	1	15	2	3	1	2	1	15	2	13495.3674	-0.0006
3	2	1	1	5	4	3	1	2	1	5	4	13495.3674	-0.0006
3	2	1	1	12	3	3	1	2	1	12	3	13495.3763	0.0030
3	2	1	1	3	5	3	1	2	1	3	5	13495.3763	-0.0003
3	2	1	1	10	3	3	1	2	1	10	3	13495.3836	0.0017
3	2	1	1	7	4	3	1	2	1	7	4	13495.3930	0.0026
3	2	1	1	11	3	3	1	2	1	5	4	13496.1691	-0.0044
3	2	1	1	18	2	3	1	2	1	12	3	13496.1731	-0.0048
3	2	1	1	8	4	3	1	2	1	3	5	13496.1764	-0.0044
3	2	1	1	16	2	3	1	2	1	10	3	13496.1896	-0.0023
3	2	1	1	13	3	3	1	2	1	7	4	13496.1964	-0.0024
3	2	1	1	4	4	3	1	2	1	10	3	13497.1110	0.0018

Table S8: Observed Transition Frequencies (in MHz) for (Z)-CHDC³⁵ClF

3	2	1	1	0	6	3	1	2	1	3	5	13497.1167	0.0027
3	2	1	1	2	5	3	1	2	1	7	4	13497.1210	-0.0002
3	1	2	0	4	4	2	2	1	0	3	3	13614.8985	0.0028
3	1	2	0	4	5	2	2	1	0	3	4	13614.9304	0.0022
3	1	2	0	4	3	2	2	1	0	3	2	13614.9409	0.0026
3	1	2	1	16	2	2	2	1	1	10	2	13621.4221	-0.0026
3	1	2	1	8	4	2	2	1	1	3	4	13621.4445	-0.0043
3	1	2	1	11	3	2	2	1	1	5	3	13621.4489	-0.0042
3	1	2	1	18	2	2	2	1	1	12	2	13621.4586	0.0001
3	1	2	1	20	1	2	2	1	1	15	1	13621.4586	-0.0018
3	1	2	1	7	4	2	2	1	1	2	4	13633.2089	-0.0017
3	1	2	1	10	3	2	2	1	1	4	3	13633.2164	-0.0014
3	1	2	1	3	5	2	2	1	1	0	5	13633.2498	-0.0015
3	1	2	1	5	4	2	2	1	1	1	4	13633.2556	-0.0015
3	1	2	1	12	3	2	2	1	1	6	3	13633.2556	-0.0058
3	1	2	1	15	2	2	2	1	1	9	2	13633.2673	0.0004
3	1	2	1	13	3	2	2	1	1	13	2	13634.5299	0.0023
3	1	2	1	16	2	2	2	1	1	16	1	13634.5299	0.0002
3	1	2	1	20	1	2	2	1	1	18	1	13634.5430	0.0008
3	1	2	1	8	4	2	2	1	1	8	3	13634.5525	-0.0010
3	1	2	1	11	3	2	2	1	1	11	2	13634.5525	-0.0022
3	1	2	1	18	2	2	2	1	1	18	1	13634.5621	0.0002
3	1	2	0	5	5	2	2	1	0	4	4	13647.1827	0.0091
3	1	2	0	5	6	2	2	1	0	4	5	13647.2328	0.0080
3	1	2	0	5	4	2	2	1	0	4	3	13647.2468	0.0096
3	1	2	1	19	2	2	2	1	1	13	2	13648.4970	-0.0010
3	1	2	1	14	3	2	2	1	1	8	3	13648.5273	-0.0031
3	1	2	1	17	2	2	2	1	1	11	2	13648.5273	-0.0044
3	1	2	1	22	1	2	2	1	1	18	1	13648.5459	-0.0031
3	1	2	1	22	1	2	2	1	1	13	2	13648.5459	-0.0034
3	1	2	1	21	1	2	2	1	1	21	0	13666.7668	0.0009
3	1	2	1	19	2	2	2	1	1	14	2	13666.7797	-0.0002
3	1	2	1	19	2	2	2	1	1	19	1	13666.7797	-0.0002
3	1	2	1	21	1	2	2	1	1	17	1	13666.7909	0.0026
3	1	2	1	14	3	2	2	1	1	14	2	13666.8104	-0.0021
3	1	2	1	17	2	2	2	1	1	17	1	13666.8181	-0.0001
3	1	2	1	22	1	2	2	1	1	19	1	13666.8298	-0.0013
4	2	2	0	4	3	4	1	3	0	3	2	13861.1719	0.0042
4	2	2	0	4	4	4	1	3	0	3	3	13861.1761	0.0053
4	2	2	0	4	5	4	1	3	0	3	4	13861.1761	0.0046
4	2	2	1	21	2	4	1	3	1	21	2	13870.6223	-0.0010
4	2	2	1	19	3	4	1	3	1	19	3	13870.6269	0.0001
4	2	2	1	17	3	4	1	3	1	17	3	13870.6269	-0.0018
4	2	2	1	14	4	4	1	3	1	14	4	13870.6315	-0.0009

Table S8: Observed Transition Frequencies (in MHz) for (Z)-CHDC³⁵ClF

4	2	2	1	4	5	4	1	3	1	4	5	13872.6295	-0.0023
4	2	2	1	2	6	4	1	3	1	2	6	13872.6356	-0.0008
4	2	2	1	1	6	4	1	3	1	1	6	13872.6356	-0.0019
4	2	2	1	9	4	4	1	3	1	9	4	13872.6356	-0.0025
4	2	2	1	0	7	4	1	3	1	0	7	13872.6405	-0.0017
4	2	2	1	6	5	4	1	3	1	6	5	13872.6405	-0.0026
4	2	2	1	10	4	4	1	3	1	16	3	13873.0526	0.0038
4	2	2	1	7	5	4	1	3	1	13	4	13873.0596	0.0045
4	2	2	1	5	5	4	1	3	1	11	4	13873.0596	0.0042
4	2	2	1	15	3	4	1	3	1	20	2	13873.0596	0.0035
4	2	2	1	3	6	4	1	3	1	8	5	13873.0664	0.0048
4	2	2	1	12	4	4	1	3	1	18	3	13873.0664	0.0049
4	2	2	1	16	3	4	1	3	1	16	3	13876.3616	-0.0014
4	2	2	1	13	4	4	1	3	1	13	4	13876.3657	-0.0007
4	2	2	1	11	4	4	1	3	1	11	4	13876.3657	-0.0022
4	2	2	1	20	2	4	1	3	1	20	2	13876.3657	-0.0022
4	2	2	1	8	5	4	1	3	1	8	5	13876.3705	-0.0010
4	2	2	1	18	3	4	1	3	1	18	3	13876.3705	-0.0020
4	2	2	1	10	4	4	1	3	1	10	4	13878.3818	-0.0018
4	2	2	1	7	5	4	1	3	1	7	5	13878.3863	-0.0013
4	2	2	1	5	5	4	1	3	1	5	5	13878.3863	-0.0024
4	2	2	1	15	3	4	1	3	1	15	3	13878.3863	-0.0026
4	2	2	1	3	6	4	1	3	1	3	6	13878.3913	-0.0014
4	2	2	1	12	4	4	1	3	1	12	4	13878.3913	-0.0023
4	2	2	1	21	2	4	1	3	1	16	3	13885.8107	-0.0065
4	2	2	1	19	3	4	1	3	1	13	4	13885.8208	0.0003
4	2	2	1	17	3	4	1	3	1	11	4	13885.8253	-0.0010
4	2	2	1	14	4	4	1	3	1	8	5	13885.8324	0.0020
4	2	2	1	2	6	4	1	3	1	7	5	13887.8282	-0.0023
4	2	2	1	1	6	4	1	3	1	5	5	13887.8361	0.0024
4	2	2	1	9	4	4	1	3	1	15	3	13887.8361	0.0004
4	2	2	1	0	7	4	1	3	1	3	6	13887.8424	0.0012
4	2	2	1	6	5	4	1	3	1	12	4	13887.8424	0.0002
2	2	0	1	17	1	2	1	1	1	21	0	14284.1608	0.0032
2	2	0	1	14	2	2	1	1	1	14	2	14284.1809	0.0005
2	2	0	1	14	2	2	1	1	1	19	1	14284.1809	0.0005
2	2	0	1	19	1	2	1	1	1	14	2	14284.1809	0.0005
2	2	0	1	21	0	2	1	1	1	17	1	14284.1948	-0.0013
2	2	0	1	17	1	2	1	1	1	11	2	14293.9137	-0.0012
2	2	0	1	14	2	2	1	1	1	8	3	14293.9244	-0.0006
2	2	0	1	11	2	2	1	1	1	17	1	14301.6498	0.0021
2	2	0	1	8	3	2	1	1	1	14	2	14301.6528	0.0026
2	2	0	1	9	2	2	1	1	1	9	2	14303.6021	-0.0019
2	2	0	1	6	3	2	1	1	1	6	3	14303.6135	0.0009

Table S8: Observed Transition Frequencies (in MHz) for (Z)-CHDC³⁵ClF

2	2	0	1	1	4	2	1	1	1	1	4	14303.6135	-0.0010
2	2	0	1	0	5	2	1	1	1	0	5	14303.6213	-0.0022
2	2	0	1	4	3	2	1	1	1	4	3	14303.6516	-0.0014
2	2	0	1	2	4	2	1	1	1	2	4	14303.6605	-0.0019
2	2	0	1	11	2	2	1	1	1	11	2	14311.3896	0.0004
2	2	0	1	8	3	2	1	1	1	8	3	14311.3966	0.0018
2	2	0	1	9	2	2	1	1	1	15	1	14313.3434	0.0040
2	2	0	1	1	4	2	1	1	1	5	3	14313.3476	0.0052
2	2	0	1	6	3	2	1	1	1	12	2	14313.3541	0.0029
2	2	0	1	0	5	2	1	1	1	3	4	14313.3603	0.0035
2	2	0	1	4	3	2	1	1	1	10	2	14313.3669	0.0071
2	2	0	1	2	4	2	1	1	1	7	3	14313.3729	-0.0019
2	2	0	1	20	0	2	1	1	1	15	1	14318.3310	-0.0027
2	2	0	1	11	2	2	1	1	1	5	3	14318.3354	-0.0014
2	2	0	1	18	1	2	1	1	1	12	2	14318.3354	-0.0023
2	2	0	1	8	3	2	1	1	1	3	4	14318.3424	-0.0010
2	2	0	1	16	1	2	1	1	1	10	2	14318.3526	-0.0017
2	2	0	1	13	2	2	1	1	1	7	3	14318.3605	-0.0010
2	2	0	1	12	2	2	1	1	1	6	3	14321.0998	0.0015
2	2	0	1	5	3	2	1	1	1	1	4	14321.1051	0.0003
2	2	0	1	3	4	2	1	1	1	0	5	14321.1051	-0.0041
2	2	0	1	10	2	2	1	1	1	4	3	14321.1385	-0.0049
2	2	0	1	7	3	2	1	1	1	2	4	14321.1438	-0.0045
2	2	0	1	10	2	2	1	1	1	16	1	14323.8891	0.0041
2	2	0	1	5	3	2	1	1	1	11	2	14323.8891	0.0040
2	2	0	1	7	3	2	1	1	1	13	2	14323.8983	0.0044
2	2	0	1	3	4	2	1	1	1	8	3	14323.8983	0.0043
2	2	0	1	5	3	2	1	1	1	5	3	14330.8296	-0.0032
2	2	0	1	12	2	2	1	1	1	12	2	14330.8350	-0.0019
2	2	0	1	3	4	2	1	1	1	3	4	14330.8442	0.0016
2	2	0	1	7	3	2	1	1	1	7	3	14330.8630	0.0024
2	1	2	1	15	1	1	1	1	1	15	0	15048.3816	0.0008
2	1	2	1	12	2	1	1	1	1	12	1	15048.3911	0.0050
2	1	2	1	5	3	1	1	1	1	5	2	15048.4088	0.0014
2	1	2	1	3	4	1	1	1	1	3	3	15048.4159	0.0017
2	1	2	1	7	3	1	1	1	1	3	3	15048.4286	0.0039
2	1	2	1	10	2	1	1	1	1	10	1	15048.4494	0.0021
2	1	2	1	7	3	1	1	1	1	7	2	15048.4548	0.0020
2	1	2	1	18	1	1	1	1	1	12	1	15054.5276	-0.0010
2	1	2	1	13	2	1	1	1	1	12	1	15054.5276	-0.0012
2	1	2	1	11	2	1	1	1	1	5	2	15054.5436	-0.0012
2	1	2	1	8	3	1	1	1	1	3	3	15054.5490	-0.0011
2	1	2	1	11	2	1	1	1	1	10	1	15054.5702	-0.0021
2	1	2	1	16	1	1	1	1	1	10	1	15054.5702	-0.0022

Table S8: Observed Transition Frequencies (in MHz) for (Z)-CHDC³⁵ClF

2	1	2	1	13	2	1	1	1	1	7	2	15054.5771	-0.0014
2	1	2	0	3	2	1	1	1	0	3	3	15058.1243	-0.0001
2	1	2	0	3	3	1	1	1	0	3	3	15058.1407	0.0008
2	1	2	0	3	4	1	1	1	0	3	4	15058.1582	0.0000
2	1	2	0	3	2	1	1	1	0	3	2	15058.1671	0.0011
2	1	2	1	19	1	1	1	1	1	12	1	15063.1124	-0.0027
2	1	2	1	19	1	1	1	1	1	15	0	15063.1190	0.0000
2	1	2	1	17	1	1	1	1	1	5	2	15063.1255	-0.0033
2	1	2	1	14	2	1	1	1	1	3	3	15063.1338	-0.0026
2	1	2	1	17	1	1	1	1	1	10	1	15063.1513	-0.0050
2	1	2	1	14	2	1	1	1	1	7	2	15063.1620	-0.0026
2	1	2	1	19	1	1	1	1	1	7	2	15063.1620	-0.0027
2	1	2	0	2	2	1	1	1	0	3	3	15064.2631	-0.0032
2	1	2	0	2	3	1	1	1	0	3	4	15064.2922	-0.0031
2	1	2	0	2	1	1	1	1	0	3	2	15064.3047	-0.0029
2	1	2	1	1	4	1	1	1	1	1	3	15066.7224	0.0037
2	1	2	1	2	4	1	1	1	1	2	3	15066.7224	0.0017
2	1	2	1	0	5	1	1	1	1	0	4	15066.7224	0.0007
2	1	2	1	6	3	1	1	1	1	6	2	15066.7269	0.0007
2	1	2	1	11	2	1	1	1	1	11	1	15072.0682	0.0018
2	1	2	1	20	0	1	1	1	1	13	1	15072.0762	0.0041
2	1	2	1	16	1	1	1	1	1	16	0	15072.0762	0.0040
2	1	2	1	8	3	1	1	1	1	8	2	15072.0838	0.0021
2	1	2	1	17	1	1	1	1	1	11	1	15080.6566	0.0062
2	1	2	1	17	1	1	1	1	1	16	0	15080.6566	0.0005
2	1	2	1	21	0	1	1	1	1	11	1	15080.6623	0.0001
2	1	2	1	14	2	1	1	1	1	13	1	15080.6684	0.0005
2	1	2	1	14	2	1	1	1	1	8	2	15080.6684	0.0004
2	1	2	1	19	1	1	1	1	1	8	2	15080.6684	0.0003
2	0	2	1	11	2	1	0	1	1	11	1	16382.8112	-0.0002
2	0	2	1	8	3	1	0	1	1	8	2	16382.8247	0.0013
2	0	2	0	3	2	1	0	1	0	3	2	16384.9669	-0.0011
2	0	2	0	3	4	1	0	1	0	3	4	16384.9705	-0.0009
2	0	2	0	3	3	1	0	1	0	3	3	16384.9815	0.0022
2	0	2	0	2	1	1	0	1	0	3	2	16397.4680	-0.0050
2	0	2	0	2	3	1	0	1	0	3	4	16397.4715	-0.0049
2	0	2	0	2	2	1	0	1	0	3	3	16397.4820	-0.0022
2	0	2	1	17	1	1	0	1	1	11	1	16400.2803	0.0029
2	0	2	1	17	1	1	0	1	1	16	0	16400.2803	-0.0007
2	0	2	1	14	2	1	0	1	1	8	2	16400.2910	-0.0005
2	0	2	1	14	2	1	0	1	1	13	1	16400.2910	-0.0005
2	0	2	1	19	1	1	0	1	1	8	2	16400.2910	-0.0005
2	0	2	1	1	4	1	0	1	1	1	3	16402.4505	0.0018
2	0	2	1	6	3	1	0	1	1	6	2	16402.4522	0.0002

Table S8: Observed Transition Frequencies (in MHz) for (Z)-CHDC³⁵ClF

2	0	2	1	0	5	1	0	1	1	0	4	16402.4559	0.0008
2	0	2	1	4	3	1	0	1	1	4	2	16402.4559	-0.0015
2	0	2	1	2	4	1	0	1	1	2	3	16402.4597	-0.0045
2	0	2	1	10	2	1	0	1	1	10	1	16403.2734	0.0017
2	0	2	1	5	3	1	0	1	1	5	2	16403.2825	0.0030
2	0	2	1	7	3	1	0	1	1	7	2	16403.2825	0.0030
2	0	2	1	3	4	1	0	1	1	3	3	16403.2905	0.0038
2	0	2	1	11	2	1	0	1	1	10	1	16415.7750	-0.0022
2	0	2	1	16	1	1	0	1	1	10	1	16415.7750	-0.0022
2	0	2	1	13	2	1	0	1	1	7	2	16415.7831	-0.0004
2	0	2	1	11	2	1	0	1	1	5	2	16415.7831	-0.0020
2	0	2	1	8	3	1	0	1	1	3	3	16415.7917	0.0009
2	0	2	1	13	2	1	0	1	1	12	1	16415.7994	0.0021
2	0	2	1	18	1	1	0	1	1	12	1	16415.7994	0.0021
2	0	2	1	17	1	1	0	1	1	10	1	16433.2417	-0.0015
2	0	2	1	19	1	1	0	1	1	7	2	16433.2501	-0.0015
2	0	2	1	17	1	1	0	1	1	5	2	16433.2501	-0.0010
2	0	2	1	14	2	1	0	1	1	3	3	16433.2585	-0.0004
2	0	2	1	19	1	1	0	1	1	12	1	16433.2664	0.0010
4	1	3	1	11	4	4	0	4	1	17	3	18016.3251	0.0057
4	1	3	1	8	5	4	0	4	1	14	4	18016.3251	0.0032
4	1	3	1	7	5	4	0	4	1	2	6	18016.5376	-0.0086
4	1	3	1	3	6	4	0	4	1	0	7	18016.5962	-0.0097
4	1	3	0	5	5	4	0	4	0	4	4	18026.9223	0.0090
4	1	3	0	5	6	4	0	4	0	4	5	18026.9680	0.0048
4	1	3	0	5	4	4	0	4	0	4	3	18026.9736	-0.0023
4	1	3	1	21	2	4	0	4	1	21	2	18031.4588	0.0014
4	1	3	1	19	3	4	0	4	1	19	3	18031.4642	0.0021
4	1	3	1	17	3	4	0	4	1	17	3	18031.5186	0.0016
4	1	3	1	14	4	4	0	4	1	14	4	18031.5186	-0.0013
4	1	3	1	22	2	4	0	4	1	22	2	18031.5426	-0.0016
4	1	3	1	4	5	4	0	4	1	4	5	18031.7353	0.0024
4	1	3	1	2	6	4	0	4	1	2	6	18031.7418	0.0015
4	1	3	1	1	6	4	0	4	1	1	6	18031.8025	0.0043
4	1	3	1	0	7	4	0	4	1	0	7	18031.8025	-0.0025
4	1	3	1	6	5	4	0	4	1	6	5	18031.8227	0.0055
4	1	3	0	4	4	4	0	4	0	4	4	18032.2456	-0.0024
4	1	3	0	4	5	4	0	4	0	4	5	18032.2959	0.0010
4	1	3	1	10	4	4	0	4	1	10	4	18032.5138	0.0012
4	1	3	1	7	5	4	0	4	1	7	5	18032.5200	0.0015
4	1	3	1	5	5	4	0	4	1	5	5	18032.5703	0.0020
4	1	3	1	3	6	4	0	4	1	3	6	18032.5703	-0.0031
4	1	3	1	12	4	4	0	4	1	12	4	18032.5892	0.0031
4	1	3	0	4	4	4	0	4	0	5	5	18037.8447	-0.0078

Table S8: Observed Transition Frequencies (in MHz) for (Z)-CHDC³⁵ClF

4	1	3	0	4	5	4	0	4	0	5	6	18037.8964	-0.0052
4	1	3	0	4	3	4	0	4	0	5	4	18037.9142	-0.0004
4	1	3	1	21	2	4	0	4	1	16	3	18047.4374	0.0013
4	1	3	1	19	3	4	0	4	1	13	4	18047.4374	-0.0033
4	1	3	1	17	3	4	0	4	1	11	4	18047.4906	-0.0019
4	1	3	1	14	4	4	0	4	1	8	5	18047.4906	-0.0056
4	1	3	1	23	1	4	0	4	1	20	2	18047.5088	0.0029
4	1	3	1	2	6	4	0	4	1	7	5	18047.7140	0.0014
4	1	3	1	0	7	4	0	4	1	3	6	18047.7757	0.0033
4	1	3	1	6	5	4	0	4	1	12	4	18047.7829	-0.0023
2	1	1	1	10	2	1	1	0	1	10	1	18541.7797	0.0010
2	1	1	1	7	3	1	1	0	1	7	2	18541.7887	0.0031
2	1	1	1	15	1	1	1	0	1	10	1	18541.7955	-0.0038
2	1	1	1	10	2	1	1	0	1	5	2	18541.7955	-0.0042
2	1	1	1	7	3	1	1	0	1	3	3	18541.8062	0.0008
2	1	1	1	12	2	1	1	0	1	7	2	18541.8062	-0.0032
2	1	1	1	5	3	1	1	0	1	5	2	18541.8193	0.0021
2	1	1	1	3	4	1	1	0	1	3	3	18541.8257	0.0022
2	1	1	1	12	2	1	1	0	1	12	1	18541.8481	0.0016
2	1	1	1	11	2	1	1	0	1	10	1	18548.7421	-0.0017
2	1	1	1	16	1	1	1	0	1	10	1	18548.7421	-0.0018
2	1	1	1	13	2	1	1	0	1	7	2	18548.7518	-0.0005
2	1	1	1	11	2	1	1	0	1	5	2	18548.7640	-0.0008
2	1	1	1	8	3	1	1	0	1	3	3	18548.7707	-0.0014
2	1	1	1	13	2	1	1	0	1	12	1	18548.7872	-0.0022
2	1	1	1	18	1	1	1	0	1	12	1	18548.7872	-0.0021
2	1	1	0	3	3	1	1	0	0	3	2	18550.3620	0.0002
2	1	1	0	3	4	1	1	0	0	3	4	18550.3855	-0.0003
2	1	1	0	3	3	1	1	0	0	3	3	18550.3925	0.0004
2	1	1	0	2	1	1	1	0	0	3	2	18557.3212	-0.0055
2	1	1	0	2	3	1	1	0	0	3	4	18557.3321	-0.0037
2	1	1	0	2	2	1	1	0	0	3	3	18557.3535	-0.0037
2	1	1	1	14	2	1	1	0	1	7	2	18558.4942	-0.0027
2	1	1	1	19	1	1	1	0	1	7	2	18558.4942	-0.0027
2	1	1	1	17	1	1	1	0	1	5	2	18558.5011	-0.0052
2	1	1	1	14	2	1	1	0	1	3	3	18558.5135	-0.0032
2	1	1	1	19	1	1	1	0	1	12	1	18558.5304	-0.0036
2	1	1	1	2	4	1	1	0	1	2	3	18560.1027	-0.0008
2	1	1	1	0	5	1	1	0	1	0	4	18560.1193	-0.0007
2	1	1	1	6	3	1	1	0	1	6	2	18560.1264	0.0040
2	1	1	1	11	2	1	1	0	1	11	1	18564.2003	0.0033
2	1	1	1	20	0	1	1	0	1	13	1	18564.2060	0.0020
2	1	1	1	16	1	1	1	0	1	16	0	18564.2060	0.0019
2	1	1	1	8	3	1	1	0	1	8	2	18564.2176	0.0009

Table S8: Observed Transition Frequencies (in MHz) for (Z)-CHDC³⁵ClF

2	1	1	1	17	1	1	1	0	1	16	0	18573.9461	0.0005
2	1	1	1	21	0	1	1	0	1	11	1	18573.9534	-0.0009
2	1	1	1	14	2	1	1	0	1	13	1	18573.9612	-0.0001
2	1	1	1	14	2	1	1	0	1	8	2	18573.9612	-0.0001
2	1	1	1	19	1	1	1	0	1	8	2	18573.9612	-0.0001
2	2	1	1	17	1	2	1	2	1	21	0	19116.5640	0.0031
2	2	1	1	14	2	2	1	2	1	19	1	19116.5833	0.0001
2	2	1	1	14	2	2	1	2	1	14	2	19116.5833	0.0000
2	2	1	1	19	1	2	1	2	1	14	2	19116.5833	0.0000
2	2	1	1	21	0	2	1	2	1	17	1	19116.5953	0.0002
2	2	1	1	17	1	2	1	2	1	11	2	19125.1554	-0.0013
2	2	1	1	14	2	2	1	2	1	8	3	19125.1683	-0.0013
2	2	1	1	21	0	2	1	2	1	16	1	19125.1764	-0.0026
2	2	1	1	19	1	2	1	2	1	20	0	19125.1764	-0.0027
2	2	1	1	11	2	2	1	2	1	17	1	19134.8609	0.0017
2	2	1	1	8	3	2	1	2	1	14	2	19134.8681	0.0028
2	2	1	1	1	4	2	1	2	1	1	4	19135.7922	-0.0022
2	2	1	1	0	5	2	1	2	1	0	5	19135.8043	-0.0022
2	2	1	1	6	3	2	1	2	1	6	3	19135.8163	0.0030
2	2	1	1	11	2	2	1	2	1	11	2	19143.4432	0.0000
2	2	1	1	8	3	2	1	2	1	8	3	19143.4530	0.0014
2	2	1	1	4	3	2	1	2	1	10	2	19144.3587	0.0065
2	2	1	1	1	4	2	1	2	1	5	3	19144.3587	0.0034
2	2	1	1	2	4	2	1	2	1	7	3	19144.3727	0.0032
2	2	1	1	0	5	2	1	2	1	3	4	19144.3727	0.0029
2	2	1	1	6	3	2	1	2	1	12	2	19144.3727	-0.0015
2	2	1	1	16	1	2	1	2	1	10	2	19149.5621	-0.0060
2	2	1	1	13	2	2	1	2	1	7	3	19149.5733	-0.0037
2	2	1	1	11	2	2	1	2	1	5	3	19149.5793	-0.0013
2	2	1	1	8	3	2	1	2	1	3	4	19149.5863	-0.0013
2	2	1	1	18	1	2	1	2	1	12	2	19149.5949	0.0007
2	2	1	1	10	2	2	1	2	1	4	3	19154.0935	-0.0027
2	2	1	1	7	3	2	1	2	1	2	4	19154.1021	-0.0030
2	2	1	1	5	3	2	1	2	1	1	4	19154.1173	-0.0040
2	2	1	1	3	4	2	1	2	1	0	5	19154.1250	-0.0040
2	2	1	1	12	2	2	1	2	1	6	3	19154.1349	-0.0019
2	2	1	1	5	3	2	1	2	1	11	2	19156.5477	0.0029
2	2	1	1	10	2	2	1	2	1	16	1	19156.5477	-0.0004
2	2	1	1	3	4	2	1	2	1	8	3	19156.5597	0.0034
2	2	1	1	7	3	2	1	2	1	13	2	19156.5647	0.0048
2	2	1	1	10	2	2	1	2	1	10	2	19162.6726	-0.0005
2	2	1	1	5	3	2	1	2	1	5	3	19162.6844	0.0022
2	2	1	1	7	3	2	1	2	1	7	3	19162.6844	-0.0011
2	2	1	1	3	4	2	1	2	1	3	4	19162.6944	0.0021

Table S8: Observed Transition Frequencies (in MHz) for (Z)-CHDC³⁵ClF

2	1	2	1	11	2	1	0	1	1	11	1	19678.5463	-0.0004
2	1	2	1	8	3	1	0	1	1	8	2	19678.5613	0.0016
2	1	2	1	3	4	1	0	1	1	0	4	19687.0758	-0.0014
2	1	2	1	10	2	1	0	1	1	4	2	19687.0894	-0.0034
2	1	2	1	7	3	1	0	1	1	2	3	19687.0894	-0.0072
2	1	2	1	17	1	1	0	1	1	11	1	19687.1328	0.0022
2	1	2	1	17	1	1	0	1	1	16	0	19687.1328	-0.0015
2	1	2	1	14	2	1	0	1	1	8	2	19687.1453	-0.0007
2	1	2	1	14	2	1	0	1	1	13	1	19687.1453	-0.0007
2	1	2	1	19	1	1	0	1	1	8	2	19687.1453	-0.0008
2	1	2	1	11	2	1	0	1	1	1	3	19693.2043	-0.0049
2	1	2	1	18	1	1	0	1	1	6	2	19693.2043	-0.0057
2	1	2	1	8	3	1	0	1	1	0	4	19693.2081	-0.0051
2	1	2	1	13	2	1	0	1	1	2	3	19693.2187	-0.0035
2	1	2	1	9	2	1	0	1	1	9	1	19695.6209	-0.0010
2	1	2	1	6	3	1	0	1	1	6	2	19695.6300	0.0016
2	1	2	1	1	4	1	0	1	1	1	3	19695.6356	0.0029
2	1	2	1	0	5	1	0	1	1	0	4	19695.6440	0.0036
2	1	2	1	4	3	1	0	1	1	4	2	19695.6732	0.0035
2	1	2	1	2	4	1	0	1	1	2	3	19695.6812	0.0042
2	1	2	1	5	3	1	0	1	1	5	2	19705.3856	0.0026
2	1	2	1	3	4	1	0	1	1	3	3	19705.3942	0.0031
2	1	2	1	7	3	1	0	1	1	7	2	19705.3942	-0.0002
2	1	2	1	7	3	1	0	1	1	3	3	19705.3976	-0.0040
2	1	2	1	11	2	1	0	1	1	10	1	19711.5094	-0.0031
2	1	2	1	16	1	1	0	1	1	10	1	19711.5094	-0.0032
2	1	2	1	13	2	1	0	1	1	7	2	19711.5195	-0.0005
2	1	2	1	11	2	1	0	1	1	5	2	19711.5195	-0.0009
2	1	2	1	8	3	1	0	1	1	3	3	19711.5280	0.0009
2	1	2	1	18	1	1	0	1	1	12	1	19711.5361	0.0025
2	1	2	1	13	2	1	0	1	1	12	1	19711.5361	0.0023
2	1	2	1	17	1	1	0	1	1	10	1	19720.0932	-0.0033
2	1	2	1	17	1	1	0	1	1	5	2	19720.1036	-0.0007
2	1	2	1	19	1	1	0	1	1	7	2	19720.1036	-0.0026
2	1	2	1	14	2	1	0	1	1	3	3	19720.1130	-0.0004
2	1	2	1	19	1	1	0	1	1	12	1	19720.1216	0.0016
3	0	3	0	4	4	2	1	2	0	4	4	20400.7737	0.0006
3	0	3	0	4	5	2	1	2	0	4	5	20400.7889	-0.0023
3	0	3	0	4	3	2	1	2	0	4	3	20400.7937	-0.0028
3	0	3	0	4	4	2	1	2	0	3	3	20409.3580	0.0057
3	0	3	0	4	5	2	1	2	0	3	4	20409.3580	0.0048
3	0	3	0	4	3	2	1	2	0	3	2	20409.3580	0.0030
3	0	3	1	11	3	2	1	2	1	11	2	20410.9533	0.0012
3	0	3	1	8	4	2	1	2	1	8	3	20410.9583	0.0014

Table S8: Observed Transition Frequencies (in MHz) for (Z)-CHDC³⁵ClF

3	0	3	1	13	3	2	1	2	1	13	2	20410.9676	0.0033
3	0	3	0	3	3	2	1	2	0	3	3	20417.0883	-0.0001
3	0	3	0	3	4	2	1	2	0	3	4	20417.0883	-0.0032
3	0	3	0	5	6	2	1	2	0	4	5	20417.3497	0.0032
3	0	3	0	5	4	2	1	2	0	4	3	20417.3540	0.0025
3	0	3	1	22	1	2	1	2	1	19	1	20418.9318	-0.0047
3	0	3	1	17	2	2	1	2	1	17	1	20418.9497	0.0030
3	0	3	1	14	3	2	1	2	1	14	2	20418.9497	-0.0006
3	0	3	1	19	2	2	1	2	1	14	2	20418.9613	0.0022
3	0	3	1	19	2	2	1	2	1	19	1	20418.9613	0.0023
3	0	3	1	22	1	2	1	2	1	13	2	20427.5171	-0.0056
3	0	3	1	22	1	2	1	2	1	18	1	20427.5171	-0.0058
3	0	3	1	17	2	2	1	2	1	11	2	20427.5286	-0.0021
3	0	3	1	14	3	2	1	2	1	8	3	20427.5351	-0.0015
3	0	3	1	19	2	2	1	2	1	13	2	20427.5461	0.0008
3	0	3	1	21	1	2	1	2	1	16	1	20427.5461	0.0005
3	0	3	0	2	2	2	1	2	0	3	3	20433.6679	-0.0020
3	0	3	0	2	3	2	1	2	0	3	4	20433.6679	-0.0033

Table S9: Observed Transition Frequencies (in MHz) for an excited state of CH₂C³⁵ClF

J'	K_a'	K_c'	s'	m_1'	m_2'	J''	K_a''	K_c''	s''	m_1''	m_2''	Observed	Obs - Calc
1	1	0	0	4	1	1	0	1	0	5	0	7230.7767	-0.0014
1	1	0	0	4	1	1	0	1	0	4	1	7230.7810	-0.0005
1	1	0	0	5	0	1	0	1	0	4	1	7230.7904	0.0017
1	1	0	0	1	2	1	0	1	0	0	3	7252.2266	-0.0031
1	1	0	0	1	2	1	0	1	0	1	2	7252.2343	-0.0015
1	1	0	0	0	3	1	0	1	0	0	3	7252.2395	-0.0030
1	1	0	0	0	3	1	0	1	0	1	2	7252.2499	0.0013
1	1	0	0	2	2	1	0	1	0	0	3	7260.8258	-0.0040
1	1	0	0	3	1	1	0	1	0	1	2	7260.8258	-0.0045
1	1	0	0	4	1	1	0	1	0	2	2	7263.5606	-0.0019
1	1	0	0	1	2	1	0	1	0	3	1	7270.4436	0.0033
1	1	0	0	0	3	1	0	1	0	2	2	7270.4531	0.0027
1	1	0	0	3	1	1	0	1	0	3	1	7279.0344	-0.0004
1	1	0	0	2	2	1	0	1	0	2	2	7279.0386	0.0009
1	0	1	0	3	1	0	0	0	0	1	1	8523.4657	0.0002
1	0	1	0	2	2	0	0	0	0	0	2	8523.4657	-0.0026
1	0	1	0	1	2	0	0	0	0	1	1	8541.6735	0.0035
1	0	1	0	0	3	0	0	0	0	0	2	8541.6802	0.0040
1	0	1	0	4	1	0	0	0	0	0	2	8556.2468	-0.0025
2	1	1	0	4	2	2	0	2	0	6	1	9230.1773	0.0012
2	1	1	0	3	2	2	0	2	0	1	3	9235.9003	-0.0054
2	1	1	0	2	3	2	0	2	0	0	4	9235.9003	-0.0073
2	1	1	0	7	0	2	0	2	0	6	1	9239.7890	0.0009
2	1	1	0	6	1	2	0	2	0	6	1	9239.8018	-0.0008
2	1	1	0	6	1	2	0	2	0	7	0	9239.8127	-0.0001
2	1	1	0	3	2	2	0	2	0	5	1	9240.9272	0.0021
2	1	1	0	2	3	2	0	2	0	4	2	9240.9338	0.0033
2	1	1	0	1	3	2	0	2	0	1	3	9245.5122	-0.0001
2	1	1	0	0	4	2	0	2	0	0	4	9245.5160	-0.0011
2	1	1	0	5	1	2	0	2	0	5	1	9247.7944	-0.0012
2	1	1	0	4	2	2	0	2	0	4	2	9247.7987	-0.0002
2	1	1	0	3	2	2	0	2	0	3	2	9253.5392	-0.0006
2	1	1	0	2	3	2	0	2	0	2	3	9253.5439	0.0002
2	1	1	0	7	0	2	0	2	0	5	1	9257.4156	-0.0036
2	1	1	0	6	1	2	0	2	0	4	2	9257.4232	-0.0022
2	1	1	0	6	1	2	0	2	0	5	1	9257.4292	-0.0044
2	1	1	0	5	1	2	0	2	0	3	2	9260.4077	-0.0026
2	1	1	0	4	2	2	0	2	0	2	3	9260.4077	-0.0045
2	1	1	0	1	3	2	0	2	0	3	2	9263.1512	0.0048
2	1	1	0	0	4	2	0	2	0	2	3	9263.1591	0.0059
3	1	2	0	3	3	3	1	3	0	3	3	9973.7465	0.0006
3	1	2	0	2	4	3	1	3	0	2	4	9973.7465	-0.0015
3	1	2	0	5	2	3	1	3	0	5	2	9974.1894	0.0005

Table S9: Observed Transition Frequencies (in MHz) for an excited state of CH₂C³⁵ClF

3	1	2	0	4	3	3	1	3	0	4	3	9974.1894	-0.0015
3	1	2	0	1	4	3	1	3	0	1	4	9974.7048	0.0025
3	1	2	0	0	5	3	1	3	0	0	5	9974.7048	0.0002
3	1	2	0	7	1	3	1	3	0	7	1	9975.1429	-0.0013
3	1	2	0	6	2	3	1	3	0	6	2	9975.1455	-0.0008
3	1	2	0	2	4	2	2	1	0	2	3	11105.2446	0.0018
3	1	2	0	3	3	2	2	1	0	3	2	11105.2446	-0.0018
3	1	2	0	4	3	2	2	1	0	2	3	11111.7499	-0.0033
3	1	2	0	2	4	2	2	1	0	0	4	11123.4521	-0.0001
3	1	2	0	4	3	2	2	1	0	4	2	11124.7602	-0.0013
3	1	2	0	0	5	2	2	1	0	0	4	11137.4030	0.0072
3	1	2	0	1	4	2	2	1	0	1	3	11137.4104	0.0080
3	1	2	0	7	1	2	2	1	0	5	1	11138.7072	-0.0046
3	1	2	0	6	2	2	2	1	0	4	2	11138.7072	-0.0055
3	1	2	0	6	2	2	2	1	0	6	1	11156.9239	-0.0021
2	0	2	0	3	2	1	1	1	0	3	1	11145.8984	0.0016
2	0	2	0	2	3	1	1	1	0	2	2	11145.9031	0.0020
2	0	2	0	2	3	1	1	1	0	0	3	11155.5152	0.0004
2	0	2	0	3	2	1	1	1	0	1	2	11155.5152	-0.0020
2	0	2	0	5	1	1	1	1	0	3	1	11158.5128	0.0013
2	0	2	0	4	2	1	1	1	0	2	2	11158.5128	-0.0016
2	0	2	0	4	2	1	1	1	0	0	3	11168.1248	-0.0033
2	0	2	0	5	1	1	1	1	0	1	2	11168.1280	-0.0039
2	0	2	0	1	3	1	1	1	0	1	2	11173.1560	0.0047
2	0	2	0	0	4	1	1	1	0	0	3	11173.1560	0.0051
2	0	2	0	5	1	1	1	1	0	5	0	11175.8145	0.0003
2	0	2	0	5	1	1	1	1	0	4	1	11175.8230	0.0021
2	0	2	0	4	2	1	1	1	0	4	1	11175.8296	0.0005
2	0	2	0	7	0	1	1	1	0	3	1	11176.1296	-0.0027
2	0	2	0	6	1	1	1	1	0	2	2	11176.1340	-0.0032
2	0	2	0	7	0	1	1	1	0	4	1	11193.4403	-0.0014
2	0	2	0	6	1	1	1	1	0	5	0	11193.4443	-0.0009
2	0	2	0	6	1	1	1	1	0	4	1	11193.4506	-0.0013
3	1	2	0	5	2	3	0	3	0	7	1	12724.1193	0.0021
3	1	2	0	4	3	3	0	3	0	6	2	12724.1218	0.0025
3	1	2	0	3	3	3	0	3	0	1	4	12725.4996	-0.0062
3	1	2	0	2	4	3	0	3	0	0	5	12725.4996	-0.0084
3	1	2	0	3	3	3	0	3	0	5	2	12734.5371	0.0039
3	1	2	0	2	4	3	0	3	0	4	3	12734.5433	0.0057
3	1	2	0	7	1	3	0	3	0	7	1	12738.0661	-0.0005
3	1	2	0	6	2	3	0	3	0	6	2	12738.0707	0.0002
3	1	2	0	1	4	3	0	3	0	1	4	12739.4504	0.0028
3	1	2	0	0	5	3	0	3	0	0	5	12739.4504	-0.0013
3	1	2	0	5	2	3	0	3	0	5	2	12741.0435	-0.0009

Table S9: Observed Transition Frequencies (in MHz) for an excited state of CH₂C³⁵ClF

3	1	2	0	4	3	3	0	3	0	4	3	12741.0478	-0.0001
3	1	2	0	3	3	3	0	3	0	3	3	12742.4532	0.0002
3	1	2	0	2	4	3	0	3	0	2	4	12742.4565	-0.0003
3	1	2	0	5	2	3	0	3	0	3	3	12748.9607	-0.0035
3	1	2	0	4	3	3	0	3	0	2	4	12748.9607	-0.0064
3	1	2	0	7	1	3	0	3	0	5	2	12754.9893	-0.0044
3	1	2	0	6	2	3	0	3	0	4	3	12754.9957	-0.0034
3	1	2	0	1	4	3	0	3	0	3	3	12756.4021	0.0072
3	1	2	0	0	5	3	0	3	0	2	4	12756.4090	0.0086
1	1	1	0	4	1	0	0	0	0	0	2	14117.0098	-0.0020
1	1	1	0	5	0	0	0	0	0	1	1	14117.0150	-0.0035
1	1	1	0	1	2	0	0	0	0	1	1	14124.7025	0.0018
1	1	1	0	0	3	0	0	0	0	0	2	14124.7134	0.0007
1	1	1	0	3	1	0	0	0	0	1	1	14134.3199	-0.0012
1	1	1	0	2	2	0	0	0	0	0	2	14134.3257	-0.0008
2	1	2	0	3	2	1	1	1	0	3	1	15393.1875	0.0011
2	1	2	0	2	3	1	1	1	0	2	2	15393.1944	0.0010
2	1	2	0	5	1	1	1	1	0	3	1	15399.3352	0.0034
2	1	2	0	4	2	1	1	1	0	2	2	15399.3352	-0.0018
2	1	2	0	3	2	1	1	1	0	1	2	15402.8058	-0.0011
2	1	2	0	2	3	1	1	1	0	0	3	15402.8058	-0.0013
2	1	2	0	7	0	1	1	1	0	3	1	15407.9274	-0.0027
2	1	2	0	6	1	1	1	1	0	2	2	15407.9342	-0.0036
2	1	2	0	4	2	1	1	1	0	0	3	15408.9476	-0.0031
2	1	2	0	5	1	1	1	1	0	1	2	15408.9476	-0.0046
2	1	2	0	1	3	1	1	1	0	1	2	15411.3918	0.0041
2	1	2	0	0	4	1	1	1	0	0	3	15411.3954	0.0048
2	1	2	0	5	1	1	1	1	0	5	0	15416.6354	0.0009
2	1	2	0	5	1	1	1	1	0	4	1	15416.6439	0.0027
2	1	2	0	4	2	1	1	1	0	4	1	15416.6514	-0.0003
2	1	2	0	7	0	1	1	1	0	4	1	15425.2388	-0.0007
2	1	2	0	6	1	1	1	1	0	5	0	15425.2444	-0.0014
2	1	2	0	6	1	1	1	1	0	4	1	15425.2509	-0.0016
3	2	1	0	4	3	3	1	2	0	6	2	16009.4283	0.0022
3	2	1	0	7	1	3	1	2	0	7	1	16010.7026	0.0000
3	2	1	0	6	2	3	1	2	0	6	2	16010.7103	0.0004
3	2	1	0	3	3	3	1	2	0	1	4	16015.3502	-0.0048
3	2	1	0	2	4	3	1	2	0	0	5	16015.3502	-0.0101
3	2	1	0	1	4	3	1	2	0	1	4	16016.6113	-0.0009
3	2	1	0	0	5	3	1	2	0	0	5	16016.6175	-0.0023
3	2	1	0	3	3	3	1	2	0	5	2	16022.7907	0.0050
3	2	1	0	2	4	3	1	2	0	4	3	16022.7990	0.0055
3	2	1	0	5	2	3	1	2	0	5	2	16023.3708	0.0004
3	2	1	0	4	3	3	1	2	0	4	3	16023.3770	-0.0002

Table S9: Observed Transition Frequencies (in MHz) for an excited state of CH₂C³⁵ClF

3	2	1	0	7	1	3	1	2	0	5	2	16024.6486	-0.0033
3	2	1	0	6	2	3	1	2	0	4	3	16024.6586	-0.0025
3	2	1	0	3	3	3	1	2	0	3	3	16029.2965	-0.0004
3	2	1	0	2	4	3	1	2	0	2	4	16029.3027	-0.0012
3	2	1	0	5	2	3	1	2	0	3	3	16029.8768	-0.0048
3	2	1	0	4	3	3	1	2	0	2	4	16029.8821	-0.0055
3	2	1	0	1	4	3	1	2	0	3	3	16030.5595	0.0055
3	2	1	0	0	5	3	1	2	0	2	4	16030.5692	0.0058
2	0	2	0	5	1	1	0	1	0	5	0	16736.5797	-0.0003
2	0	2	0	4	2	1	0	1	0	4	1	16736.5931	0.0015
2	0	2	0	3	2	1	0	1	0	1	2	16738.5485	0.0006
2	0	2	0	2	3	1	0	1	0	0	3	16738.5485	-0.0029
2	0	2	0	5	1	1	0	1	0	1	2	16751.1585	-0.0041
2	0	2	0	4	2	1	0	1	0	0	3	16751.1585	-0.0062
2	0	2	0	7	0	1	0	1	0	4	1	16754.2033	-0.0009
2	0	2	0	6	1	1	0	1	0	4	1	16754.2135	-0.0009
2	0	2	0	1	3	1	0	1	0	1	2	16756.1850	0.0030
2	0	2	0	0	4	1	0	1	0	0	3	16756.1916	0.0041
2	0	2	0	3	2	1	0	1	0	3	1	16756.7551	0.0027
2	0	2	0	2	3	1	0	1	0	2	2	16756.7626	0.0033
2	0	2	0	5	1	1	0	1	0	3	1	16769.3670	-0.0001
2	0	2	0	4	2	1	0	1	0	2	2	16769.3722	-0.0004
2	2	0	0	7	0	2	1	1	0	6	1	17059.6481	0.0045
2	2	0	0	6	1	2	1	1	0	6	1	17059.6684	0.0006
2	2	0	0	6	1	2	1	1	0	7	0	17059.6828	0.0006
2	2	0	0	7	0	2	1	1	0	5	1	17069.2806	-0.0010
2	2	0	0	6	1	2	1	1	0	4	2	17069.2938	-0.0005
2	2	0	0	4	2	2	1	1	0	6	1	17077.2957	0.0034
2	2	0	0	1	3	2	1	1	0	1	3	17079.1339	-0.0024
2	2	0	0	0	4	2	1	1	0	0	4	17079.1448	-0.0027
2	2	0	0	5	1	2	1	1	0	5	1	17086.9120	0.0010
2	2	0	0	4	2	2	1	1	0	4	2	17086.9202	0.0014
2	2	0	0	1	3	2	1	1	0	3	2	17088.7466	0.0038
2	2	0	0	0	4	2	1	1	0	2	3	17088.7598	0.0029
2	2	0	0	5	1	2	1	1	0	3	2	17093.7795	-0.0020
2	2	0	0	4	2	2	1	1	0	2	3	17093.7850	-0.0023
2	2	0	0	3	2	2	1	1	0	1	3	17096.7763	-0.0040
2	2	0	0	2	3	2	1	1	0	0	4	17096.7815	-0.0052
2	2	0	0	3	2	2	1	1	0	5	1	17099.5203	0.0039
2	2	0	0	2	3	2	1	1	0	4	2	17099.5317	0.0041
2	2	0	0	3	2	2	1	1	0	3	2	17106.3877	0.0008
2	2	0	0	2	3	2	1	1	0	2	3	17106.3965	0.0004
4	1	3	0	6	3	4	0	4	0	6	3	17987.4797	-0.0032
4	1	3	0	1	5	4	0	4	0	1	5	17987.8433	0.0025

Table S9: Observed Transition Frequencies (in MHz) for an excited state of CH₂C³⁵ClF

4	1	3	0	0	6	4	0	4	0	0	6	17987.8433	-0.0014
4	1	3	0	4	4	4	0	4	0	4	4	17988.4972	-0.0009
4	1	3	0	3	4	4	0	4	0	3	4	17988.8530	0.0026
4	1	3	0	2	5	4	0	4	0	2	5	17988.8530	-0.0012
2	1	1	0	3	2	1	1	0	0	3	1	18731.2594	0.0020
2	1	1	0	2	3	1	1	0	0	2	2	18731.2674	0.0021
2	1	1	0	5	1	1	1	0	0	3	1	18738.1270	-0.0009
2	1	1	0	4	2	1	1	0	0	2	2	18738.1322	-0.0016
2	1	1	0	3	2	1	1	0	0	1	2	18739.8517	-0.0002
2	1	1	0	2	3	1	1	0	0	0	3	18739.8517	-0.0009
2	1	1	0	4	2	1	1	0	0	0	3	18746.7171	-0.0040
2	1	1	0	5	1	1	1	0	0	1	2	18746.7171	-0.0053
2	1	1	0	5	1	1	1	0	0	5	0	18753.5942	0.0039
2	1	1	0	4	2	1	1	0	0	4	1	18753.6097	0.0007
3	0	3	0	3	3	2	1	2	0	1	3	20146.0259	-0.0027
3	0	3	0	2	4	2	1	2	0	0	4	20146.0259	-0.0033
3	0	3	0	3	3	2	1	2	0	3	2	20154.6111	0.0017
3	0	3	0	2	4	2	1	2	0	2	3	20154.6155	0.0029
3	0	3	0	5	2	2	1	2	0	5	1	20156.3835	-0.0004
3	0	3	0	4	3	2	1	2	0	4	2	20156.3891	0.0008
3	0	3	0	5	2	2	1	2	0	3	2	20162.5289	-0.0004
3	0	3	0	4	3	2	1	2	0	2	3	20162.5289	-0.0029
3	0	3	0	1	4	2	1	2	0	1	3	20162.9811	0.0053
3	0	3	0	0	5	2	1	2	0	0	4	20162.9811	0.0032
3	0	3	0	6	2	2	1	2	0	6	1	20164.7145	-0.0016
3	0	3	0	7	1	2	1	2	0	5	1	20173.3067	-0.0043
3	0	3	0	6	2	2	1	2	0	4	2	20173.3145	-0.0024
2	1	2	0	5	1	1	0	1	0	5	0	20977.3996	-0.0007
2	1	2	0	4	2	1	0	1	0	4	1	20977.4151	0.0010
2	1	2	0	2	3	1	0	1	0	0	3	20985.8405	-0.0032
2	1	2	0	7	0	1	0	1	0	4	1	20986.0009	-0.0010
2	1	2	0	6	1	1	0	1	0	4	1	20986.0140	-0.0010
2	1	2	0	1	3	1	0	1	0	1	2	20994.4204	0.0020
2	1	2	0	0	4	1	0	1	0	0	3	20994.4296	0.0025
2	1	2	0	3	2	1	0	1	0	3	1	21004.0439	0.0019
2	1	2	0	2	3	1	0	1	0	2	2	21004.0545	0.0029
2	1	2	0	5	1	1	0	1	0	3	1	21010.1861	-0.0013
2	1	2	0	4	2	1	0	1	0	2	2	21010.1945	-0.0007
2	1	2	0	6	1	1	0	1	0	2	2	21018.7942	-0.0018