

Supplemental Material
Fourier-transform microwave spectroscopy of
the ClCO radical

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Table S1. Observed transition frequencies of the $^{35}\text{ClCO}$ radical. (in MHz)

N'	K_a'	K_c'	J'	F'	N	K_a	K_c	J	F	Observed	Calculated	O.-C.
1	0	1	0.5	1.0	0	0	0	0.5	2.0	11429.552	11429.552	0.000
1	0	1	0.5	2.0	0	0	0	0.5	2.0	11461.819	11461.816	0.003
1	0	1	1.5	0.0	0	0	0	0.5	1.0	11435.798	11435.796	0.002
1	0	1	1.5	1.0	0	0	0	0.5	1.0	11398.419	11398.419	0.000
1	0	1	1.5	2.0	0	0	0	0.5	1.0	11427.876	11427.875	0.001
1	0	1	1.5	2.0	0	0	0	0.5	2.0	11191.925	11191.925	0.000
1	0	1	1.5	3.0	0	0	0	0.5	2.0	11399.862	11399.860	0.002
2	0	2	1.5	0.0	1	0	1	0.5	1.0	22862.010	22862.011	-0.001
2	0	2	1.5	1.0	1	0	1	0.5	1.0	22869.080	22869.081	-0.001
2	0	2	1.5	1.0	1	0	1	0.5	2.0	22836.816	22836.817	-0.001
2	0	2	1.5	2.0	1	0	1	0.5	1.0	22875.341	22875.342	-0.001
2	0	2	1.5	2.0	1	0	1	0.5	2.0	22843.079	22843.078	0.001
2	0	2	1.5	3.0	1	0	1	0.5	2.0	22843.057	22843.060	-0.003
2	0	2	1.5	3.0	1	0	1	1.5	2.0	23112.951	23112.950	0.001
2	0	2	1.5	3.0	1	0	1	1.5	3.0	22905.014	22905.015	-0.001
2	0	2	2.5	1.0	1	0	1	1.5	0.0	22823.173	22823.173	0.000
2	0	2	2.5	1.0	1	0	1	1.5	1.0	22860.550	22860.549	0.001
2	0	2	2.5	1.0	1	0	1	1.5	2.0	22831.091	22831.094	-0.003
2	0	2	2.5	2.0	1	0	1	1.5	1.0	22847.048	22847.048	0.000
2	0	2	2.5	2.0	1	0	1	1.5	2.0	22817.592	22817.593	-0.001
2	0	2	2.5	3.0	1	0	1	1.5	2.0	22847.901	22847.901	0.000
2	0	2	2.5	3.0	1	0	1	1.5	3.0	22639.967	22639.966	0.001
2	0	2	2.5	4.0	1	0	1	1.5	3.0	22826.621	22826.620	0.001
3	0	3	2.5	1.0	2	0	2	1.5	0.0	34293.166	34293.164	0.002
3	0	3	2.5	1.0	2	0	2	1.5	1.0	34286.094	34286.094	0.000
3	0	3	2.5	2.0	2	0	2	1.5	1.0	34288.059	34288.060	-0.001
3	0	3	2.5	2.0	2	0	2	1.5	2.0	34281.799	34281.798	0.001
3	0	3	2.5	3.0	2	0	2	1.5	2.0	34279.490	34279.494	-0.004
3	0	3	2.5	3.0	2	0	2	1.5	3.0	34279.516	34279.512	0.004
3	0	3	2.5	4.0	2	0	2	1.5	3.0	34269.500	34269.502	-0.002
3	0	3	3.5	2.0	2	0	2	2.5	1.0	34256.995	34256.996	-0.001
3	0	3	3.5	2.0	2	0	2	2.5	2.0	34270.496	34270.497	-0.001
3	0	3	3.5	3.0	2	0	2	2.5	2.0	34263.938	34263.938	0.000
3	0	3	3.5	3.0	2	0	2	2.5	3.0	34233.630	34233.629	0.001
3	0	3	3.5	4.0	2	0	2	2.5	3.0	34267.680	34267.680	0.000
3	0	3	3.5	5.0	2	0	2	2.5	4.0	34250.238	34250.237	0.001

Table S2. Observed transition frequencies of the $^{37}\text{ClCO}$ radical. (in MHz)

N'	K_a'	K_c'	J'	F'	N	K_a	K_c	J	F	Observed	Calculated	O.-C.
1	0	1	0.5	1.0	0	0	0	0.5	2.0	11181.371	11181.373	-0.002
1	0	1	0.5	2.0	0	0	0	0.5	2.0	11208.409	11208.408	0.001
1	0	1	1.5	0.0	0	0	0	0.5	1.0	11180.704	11180.701	0.003
1	0	1	1.5	1.0	0	0	0	0.5	1.0	11152.185	11152.185	0.000
1	0	1	1.5	2.0	0	0	0	0.5	1.0	11177.181	11177.182	-0.001
1	0	1	1.5	3.0	0	0	0	0.5	2.0	11151.240	11151.240	0.000
2	0	2	1.5	0.0	1	0	1	0.5	1.0	22363.586	22363.580	0.006
2	0	2	1.5	1.0	1	0	1	0.5	1.0	22368.523	22368.524	-0.001
2	0	2	1.5	1.0	1	0	1	0.5	2.0	22341.489	22341.489	0.000
2	0	2	1.5	2.0	1	0	1	0.5	1.0	22372.709	22372.709	0.000
2	0	2	1.5	2.0	1	0	1	0.5	2.0	22345.673	22345.673	0.000
2	0	2	1.5	3.0	1	0	1	0.5	2.0	22344.379	22344.382	-0.003
2	0	2	1.5	2.0	1	0	1	1.5	3.0	22402.841	22402.841	0.000
2	0	2	1.5	3.0	1	0	1	1.5	3.0	22401.549	22401.550	-0.001
2	0	2	2.5	1.0	1	0	1	1.5	0.0	22326.329	22326.329	0.000
2	0	2	2.5	1.0	1	0	1	1.5	1.0	22354.846	22354.846	0.000
2	0	2	2.5	2.0	1	0	1	1.5	1.0	22345.741	22345.743	-0.002
2	0	2	2.5	2.0	1	0	1	1.5	2.0	22320.748	22320.745	0.003
2	0	2	2.5	3.0	1	0	1	1.5	2.0	22347.137	22347.138	-0.001
2	0	2	2.5	4.0	1	0	1	1.5	3.0	22327.555	22327.556	-0.001