

Appendix A: Supplementary tables and figure

Table A.1. Line parameters of assigned lines in L483

Molecule	Transition	Frequency (MHz)	V_{LSR} (km s ⁻¹)	Δv (km s ⁻¹)	T_A^* peak (K)	$\int T_A^* dv$ (K km s ⁻¹)	Notes
H ₂ C ₄	9 _{1,9} -8 _{1,8}	80046.678	5.29(3)	0.46(3)	0.046	0.023(2)	
<i>c</i> -HCC ¹³ CH	2 _{0,2} -1 _{1,1}	80047.537	5.26(3)	0.40(3)	0.295	0.126(12)	
H ₂ CCO	4 _{1,4} -3 _{1,3}	80076.652	5.30(3)	0.47(3)	0.139	0.069(6)	
H ₂ NCO ⁺	4 _{1,4} -3 _{1,3}	80246.484	5.16(3)	0.41(11)	0.005	0.0022(2)	
<i>c</i> -C ₃ HD	3 _{2,2} -3 _{0,3}	80255.666	5.25(3)	0.36(7)	0.006	0.0023(2)	5
HSCN	7 _{0,7} -6 _{0,6}	80283.167	5.30(3)	0.49(9)	0.013	0.007(1)	
DCO ₂ ⁺	4 _{0,4} -3 _{0,3}	80288.759	5.30(3)	0.37(3)	0.014	0.0053(5)	
H ₂ C ₄	9 _{0,9} -8 _{0,8}	80383.887	5.17(3)	0.42(3)	0.023	0.010(1)	
<i>l</i> -C ₃ H	² Π _{3/2} <i>J</i> = 7/2-5/2 <i>F</i> = 4-3 <i>f</i>	80388.107	5.39(3)	0.66(8)	0.009	0.0062(6)	
<i>l</i> -C ₃ H	² Π _{3/2} <i>J</i> = 7/2-5/2 <i>F</i> = 4-3 <i>e</i>	80420.646	5.32(3)	0.65(16)	0.004	0.003(1)	5
CH ₃ NC	4 ₀ -3 ₀	80421.910	5.32(3)	0.45(13)	0.007	0.003(1)	5
CH ₂ CN	4 _{0,4} -3 _{0,3} <i>J</i> = 9/2-7/2 <i>F</i> ₁ = 11/2-9/2 <i>F</i> = 13/2-11/2	80480.384			0.095	0.076(7)	2, 3, 6
CH ₂ CN	4 _{0,4} -3 _{0,3} <i>J</i> = 9/2-7/2 <i>F</i> ₁ = 11/2-9/2 <i>F</i> = 11/2-9/2	80480.384					2, 3
CH ₂ CN	4 _{0,4} -3 _{0,3} <i>J</i> = 9/2-7/2 <i>F</i> ₁ = 11/2-9/2 <i>F</i> = 9/2-7/2	80480.384					2, 3
CH ₂ CN	4 _{0,4} -3 _{0,3} <i>J</i> = 9/2-7/2 <i>F</i> ₁ = 11/2-9/2 <i>F</i> = 7/2-5/2	80481.644	5.28(13)	0.65(18)	0.027	0.019(2)	2
CH ₂ CN	4 _{0,4} -3 _{0,3} <i>J</i> = 9/2-7/2 <i>F</i> ₁ = 11/2-9/2 <i>F</i> = 9/2-7/2	80482.225	5.34(13)	0.62(18)	0.035	0.023(2)	2
CH ₂ CN	4 _{0,4} -3 _{0,3} <i>J</i> = 9/2-7/2 <i>F</i> ₁ = 9/2-7/2 <i>F</i> = 11/2-9/2	80483.076					2
CH ₂ CN	4 _{0,4} -3 _{0,3} <i>J</i> = 9/2-7/2 <i>F</i> ₁ = 7/2-5/2 <i>F</i> = 5/2-3/2	80483.076					2
CH ₂ CN	4 _{0,4} -3 _{0,3} <i>J</i> = 9/2-7/2 <i>F</i> ₁ = 7/2-5/2 <i>F</i> = 7/2-5/2	80483.850	5.41(14)	0.54(27)	0.017	0.010(4)	2
CH ₂ CN	4 _{0,4} -3 _{0,3} <i>J</i> = 9/2-7/2 <i>F</i> ₁ = 7/2-5/2 <i>F</i> = 9/2-7/2	80484.898	5.30(5)	0.49(17)	0.036	0.019(5)	
CH ₂ CN	4 _{0,4} -3 _{0,3} <i>J</i> = 7/2-5/2 <i>F</i> ₁ = 7/2-5/2 <i>F</i> = 9/2-7/2	80487.270	5.41(3)	0.50(13)	0.037	0.020(5)	2
CH ₂ CN	4 _{0,4} -3 _{0,3} <i>J</i> = 7/2-5/2 <i>F</i> ₁ = 7/2-5/2 <i>F</i> = 7/2-5/2	80488.530	5.32(13)	0.53(18)	0.027	0.015(2)	2
CH ₂ CN	4 _{0,4} -3 _{0,3} <i>J</i> = 7/2-5/2 <i>F</i> ₁ = 7/2-5/2 <i>F</i> = 5/2-3/2	80489.581	5.22(13)	0.39(18)	0.018	0.008(2)	2
CH ₂ CN	4 _{0,4} -3 _{0,3} <i>J</i> = 7/2-5/2 <i>F</i> ₁ = 9/2-7/2 <i>F</i> = 11/2-9/2	80490.261	5.30(13)	0.38(18)	0.047	0.019(2)	2, 3
CH ₂ CN	4 _{0,4} -3 _{0,3} <i>J</i> = 7/2-5/2 <i>F</i> ₁ = 9/2-7/2 <i>F</i> = 9/2-7/2	80490.261					2, 3
CH ₂ CN	4 _{0,4} -3 _{0,3} <i>J</i> = 7/2-5/2 <i>F</i> ₁ = 9/2-7/2 <i>F</i> = 9/2-7/2	80490.711	5.29(13)	0.42(18)	0.036	0.016(2)	2
CH ₂ CN	4 _{0,4} -3 _{0,3} <i>J</i> = 7/2-5/2 <i>F</i> ₁ = 9/2-7/2 <i>F</i> = 7/2-5/2	80491.263	5.35(13)	0.60(18)	0.028	0.018(2)	2, 3
CH ₂ CN	4 _{0,4} -3 _{0,3} <i>J</i> = 7/2-5/2 <i>F</i> ₁ = 5/2-3/2 <i>F</i> = 7/2-5/2	80491.263					2, 3
CH ₂ CN	4 _{0,4} -3 _{0,3} <i>J</i> = 7/2-5/2 <i>F</i> ₁ = 5/2-3/2 <i>F</i> = 3/2-1/2	80491.263					2, 3
HCS	2 _{0,2} -1 _{0,1} <i>J</i> = 5/2-3/2 <i>F</i> = 3-2	80553.516	5.39(3)	0.60(5)	0.015	0.009(1)	
HCS	2 _{0,2} -1 _{0,1} <i>J</i> = 5/2-3/2 <i>F</i> = 2-1	80565.596	5.32(7)	0.77(8)	0.012	0.010(1)	
CH ₂ DCCH	5 _{1,5} -4 _{1,4}	80577.159	5.26(18)	0.44(3)	0.101	0.048(4)	
HCS	2 _{0,2} -1 _{0,1} <i>J</i> = 3/2-1/2 <i>F</i> = 2-1	80596.409	5.49(3)	0.96(13)	0.010	0.010(1)	
HCS	2 _{0,2} -1 _{0,1} <i>J</i> = 3/2-1/2 <i>F</i> = 1-0	80611.994	5.32(6)	1.07(25)	0.005	0.006(1)	
<i>c</i> -HCC ¹³ CH	2 _{1,2} -1 _{1,1}	80616.890	5.21(3)	0.52(7)	0.011	0.006(1)	
HCS	2 _{0,2} -1 _{0,1} <i>J</i> = 3/2-1/2 <i>F</i> = 1-1	80618.820	5.51(4)	0.66(22)	0.004	0.003(1)	5
H ₂ C ₄	9 _{1,8} -8 _{1,7}	80718.829	5.29(13)	0.56(18)	0.038	0.022(2)	
<i>c</i> -C ₃ H ₂	4 _{2,2} -4 _{1,3}	80723.180	5.28(13)	0.66(18)	0.039	0.027(2)	
<i>c</i> -HCC ¹³ CH	3 _{1,2} -3 _{0,3}	80775.347	5.30(3)	0.58(5)	0.016	0.010(1)	
H ₂ CCO	4 _{0,4} -3 _{0,3}	80832.117	5.26(3)	0.58(3)	0.069	0.043(4)	
CH ₂ DCCH	5 _{2,4} -4 _{2,3}	80898.934	5.30(9)	0.63(6)	0.018	0.012(1)	
CH ₂ DCCH	5 _{2,3} -4 _{2,2}	80901.166	5.26(15)	0.57(8)	0.015	0.009(1)	
CH ₂ DCCH	5 _{0,5} -4 _{0,4}	80902.226	5.26(3)	0.47(3)	0.178	0.088(8)	
H ₂ NCO ⁺	4 _{0,4} -3 _{0,3}	80906.933	5.31(17)	0.55(17)	0.005	0.003(1)	
C ₃ S	14-13	80928.180	5.29(3)	0.50(3)	0.099	0.053(5)	
C ¹³ CS	6 ₇ -5 ₆ <i>F</i> = 8-7	81142.367	5.06(3)	0.47(7)	0.011	0.006(1)	
C ¹³ CS	6 ₇ -5 ₆ <i>F</i> = 7-6	81143.302	5.68(3)	0.45(9)	0.009	0.004(1)	
<i>c</i> -HC ¹³ CCH	2 _{0,2} -1 _{1,1}	81150.881	5.26(10)	0.48(4)	0.019	0.010(1)	
HSC	2 _{0,2} -1 _{0,1} <i>J</i> = 3/2-1/2 <i>F</i> = 2-1	81194.075	5.36(3)	0.72(14)	0.006	0.005(1)	
HSC	2 _{0,2} -1 _{0,1} <i>J</i> = 5/2-3/2 <i>F</i> = 3-2	81199.988	5.39(3)	0.43(8)	0.008	0.004(1)	2
CH ₂ CN	4 _{1,3} -3 _{1,2} <i>J</i> = 7/2-5/2 <i>F</i> = 9/2-7/2	81206.601	5.31(3)	0.56(6)	0.010	0.0062(6)	
CH ₂ CN	4 _{1,3} -3 _{1,2} <i>J</i> = 7/2-5/2 <i>F</i> = 7/2-5/2	81207.379	5.33(3)	0.44(5)	0.009	0.0042(4)	
CH ₂ CN	4 _{1,3} -3 _{1,2} <i>J</i> = 7/2-5/2 <i>F</i> = 5/2-3/2	81208.302	5.22(4)	0.67(12)	0.006	0.005(1)	
CH ₂ DCCH	5 _{1,4} -4 _{1,3}	81228.145	5.27(3)	0.47(3)	0.098	0.048(4)	
CH ₂ CN	4 _{1,3} -3 _{1,2} <i>J</i> = 9/2-7/2	81232.654	5.37(11)	0.97(6)	0.015	0.016(1)	6
NCO	² Π _{3/2} <i>J</i> = 7/2-5/2 <i>F</i> = 9/2-7/2 <i>e</i>	81404.300	5.30(3)	0.69(11)	0.008	0.006(1)	
NCO	² Π _{3/2} <i>J</i> = 7/2-5/2 <i>F</i> = 9/2-7/2 <i>f</i>	81404.813	5.38(3)	0.56(7)	0.010	0.006(1)	
NCO	² Π _{3/2} <i>J</i> = 7/2-5/2 <i>F</i> = 7/2-5/2 <i>e</i>	81413.120	5.39(3)	0.49(13)	0.006	0.0031(3)	
NCO	² Π _{3/2} <i>J</i> = 7/2-5/2 <i>F</i> = 7/2-5/2 <i>f</i>	81413.573	5.28(4)	0.66(13)	0.007	0.005(1)	
NCO	² Π _{3/2} <i>J</i> = 7/2-5/2 <i>F</i> = 5/2-3/2 <i>e</i>	81418.385	5.25(3)	0.44(13)	0.006	0.003(1)	5
NCO	² Π _{3/2} <i>J</i> = 7/2-5/2 <i>F</i> = 5/2-3/2 <i>f</i>	81418.884	5.39(3)	0.35(16)	0.004	0.0015(1)	5
CH ₃ C ₄ H	20 ₁ -19 ₁	81426.316	5.27(3)	0.62(14)	0.008	0.005(1)	
CH ₃ C ₄ H	20 ₀ -19 ₀	81427.108	5.27(3)	0.48(8)	0.010	0.005(1)	

Table A.1. continued.

Molecule	Transition	Frequency (MHz)	V_{LSR} (km s ⁻¹)	Δv (km s ⁻¹)	T_A^* peak (K)	$\int T_A^* dv$ (K km s ⁻¹)	Notes
HNO	1 _{0,1} -0 _{0,0}	81477.490	5.15(3)	0.57(3)	0.073	0.044(4)	
C ₂ S	6 ₇ -5 ₆	81505.170	5.19(3)	0.52(3)	0.794	0.439(43)	
HCCCHO	2 _{1,2} -1 _{0,1}	81525.876	5.28(3)	0.38(19)	0.010	0.004(1)	
HC ¹³ CCN	9-8	81534.111	5.31(3)	0.50(3)	0.095	0.050(5)	
HCC ¹³ CN	9-8	81541.981	5.29(3)	0.51(3)	0.101	0.055(5)	
H ₂ NCO ⁺	4 _{1,3} -3 _{1,2}	81565.552	5.22(3)	0.61(23)	0.007	0.004(1)	
DNCO	4 _{0,4} -3 _{0,3}	81571.913	5.34(3)	0.47(3)	0.065	0.032(3)	
H ₂ CCO	4 _{1,3} -3 _{1,2}	81586.230	5.28(3)	0.54(3)	0.131	0.075(7)	
HC ₃ N	9-8 $F=9-9$	81879.925	5.28(54)	0.46(22)	0.040	0.020(9)	
HC ₃ N	9-8	81881.468			3.049	2.143(214)	1
HC ₃ N	9-8 $F=8-8$	81883.174	5.28(54)	0.50(24)	0.036	0.019(9)	
<i>c</i> -C ₃ H ₂	2 _{0,2} -1 _{1,1}	82093.544	5.31(3)	0.54(3)	1.601	0.913(91)	
HNCS	7 _{0,7} -6 _{0,6}	82101.824	5.24(54)	0.41(20)	0.009	0.004(1)	5
<i>c</i> -C ₃ H ₂ O	6 _{0,6} -5 _{0,5}	82283.171	5.28(3)	0.39(6)	0.016	0.006(1)	
<i>c</i> -HC ¹³ CCH	2 _{1,2} -1 _{0,1}	82303.747	5.25(3)	0.45(3)	0.060	0.029(2)	
<i>l</i> -C ₃ H ₂	4 _{1,4} -3 _{1,3}	82395.089	5.28(3)	0.45(3)	0.187	0.089(8)	
HCCCHO	9 _{1,9} -8 _{1,8}	82424.912	5.28(3)	0.56(9)	0.011	0.007(1)	
CH ₃ O	² E _{3/2} $N=1-0$ $K=0$ $J=3/2-1/2$ $F=1-0$ $\Lambda = -1$	82455.980	5.20(4)	0.57(12)	0.010	0.006(1)	
CH ₃ O	² E _{3/2} $N=1-0$ $K=0$ $J=3/2-1/2$ $F=2-1$ $\Lambda = -1$	82458.252	5.45(3)	0.66(9)	0.015	0.011(1)	
CH ₃ O	² E _{3/2} $N=1-0$ $K=0$ $J=3/2-1/2$ $F=2-1$ $\Lambda = +1$	82471.825	5.37(3)	0.56(7)	0.017	0.010(1)	
CH ₃ O	² E _{3/2} $N=1-0$ $K=0$ $J=3/2-1/2$ $F=1-0$ $\Lambda = +1$	82524.180	5.33(3)	0.74(21)	0.007	0.006(1)	5
HC ₃ N	31-30	82539.039	5.31(3)	0.82(4)	0.048	0.042(4)	
CH ₃ C ₃ N	20 ₀ -19 ₀	82626.518	5.15(5)	0.58(13)	0.008	0.005(1)	
CH ₃ OCH ₃	3 _{1,3} -2 _{0,2} $EA + AE$	82649.437	5.31(4)	0.39(12)	0.009	0.004(1)	
CH ₃ OCH ₃	3 _{1,3} -2 _{0,2} EE	82650.325	5.24(3)	0.55(6)	0.020	0.012(1)	
CH ₃ OCH ₃	3 _{1,3} -2 _{0,2} AA	82651.210	5.28(4)	0.74(14)	0.008	0.006(1)	
CNCN	8-7	82784.692	5.23(3)	0.83(12)	0.010	0.009(1)	
CH ₃ C ¹³ CH	5 ₁ -4 ₁	82899.544	5.33(3)	0.42(6)	0.018	0.008(1)	
CH ₃ C ¹³ CH	5 ₀ -4 ₀	82901.099	5.30(3)	0.56(8)	0.017	0.010(1)	
<i>c</i> -C ₃ H ₂	3 _{1,2} -3 _{0,3}	82966.200	5.28(3)	0.52(3)	0.756	0.419(41)	
D ₂ CS	3 _{1,3} -2 _{1,3}	83077.759	5.36(3)	0.36(4)	0.016	0.006(1)	
¹³ CH ₃ CCH	5 ₁ -4 ₁	83129.527	5.25(21)	0.42(6)	0.020	0.009(1)	
¹³ CH ₃ CCH	5 ₀ -4 ₀	83131.079	5.28(16)	0.53(6)	0.020	0.011(1)	
<i>l</i> -C ₃ H ₂	4 _{0,4} -3 _{0,3}	83165.345	5.31(3)	0.41(3)	0.127	0.056(5)	
HNC ¹⁸ O	4 _{0,4} -3 _{0,3}	83191.568	5.32(3)	0.53(17)	0.007	0.004(1)	5
C ₂ H ₃ CN	9 _{1,9} -8 _{1,8}	83207.507	5.36(4)	0.96(30)	0.006	0.006(1)	5
CHD ₂ OH	2 ₀ -1 ₀ e_0	83289.630	5.33(3)	0.30(6)	0.016	0.005(1)	
<i>c</i> -HCC ¹³ CH	3 _{2,2} -3 _{1,3}	83474.137	5.29(3)	0.55(3)	0.019	0.011(1)	
C ₅ H	² Π _{3/2} $J=35/2-33/2$ a	83541.407	5.25(4)	0.91(17)	0.005	0.005(1)	
C ₅ H	² Π _{3/2} $J=35/2-33/2$ b	83546.917	5.39(5)	0.53(10)	0.004	0.0024(2)	
CH ₃ CHO	2 _{1,2} -1 _{0,1} E	83584.279	5.29(3)	0.61(5)	0.014	0.009(1)	
<i>c</i> -HCC ¹³ CH	2 _{0,2} -1 _{0,1}	83616.261	5.25(3)	0.49(9)	0.007	0.0035(3)	
SO ₂	8 _{1,7} -8 _{0,8}	83688.093	5.28(3)	0.47(6)	0.014	0.007(1)	
H ¹³ C ¹⁵ N	1-0	83727.577	5.36(3)	0.67(10)	0.006	0.0043(4)	
HCCCHO	9 _{0,9} -8 _{0,8}	83775.819	5.22(3)	0.42(3)	0.019	0.0085(8)	
HOCN	4 _{0,4} -3 _{0,3}	83900.570	5.32(3)	0.51(3)	0.093	0.050(5)	
<i>l</i> -C ₃ H ₂	4 _{1,3} -3 _{1,2}	83933.699	5.31(3)	0.44(3)	0.172	0.082(8)	
HC ³⁴ S ⁺	2-1	83965.626	5.30(3)	0.50(3)	0.014	0.0072(7)	
HNC ₃	9-8	84028.240	5.29(3)	0.43(3)	0.026	0.012(1)	
¹³ CCH	$N=1-0$ $J=3/2-1/2$ $F_1=2-1$ $F=5/2-3/2$	84119.329	5.34(3)	0.46(3)	0.036	0.018(1)	
¹³ CCH	$N=1-0$ $J=3/2-1/2$ $F_1=2-1$ $F=3/2-1/2$	84124.143	5.33(3)	0.45(3)	0.021	0.010(1)	
DC ¹³ CCN	10-9	84149.304	5.26(13)	0.49(17)	0.006	0.0032(3)	
¹³ CCH	$N=1-0$ $J=3/2-1/2$ $F_1=1-0$ $F=1/2-1/2$	84151.352	5.25(13)	0.77(17)	0.008	0.0070(6)	
¹³ CCH	$N=1-0$ $J=3/2-1/2$ $F_1=1-0$ $F=3/2-1/2$	84153.305	5.33(13)	0.48(17)	0.025	0.013(1)	
C ₂ ³⁴ S	7 ₆ -6 ₅	84180.562	5.30(3)	0.31(5)	0.007	0.0024(2)	
¹³ CCH	$N=1-0$ $J=1/2-1/2$ $F_1=0-1$ $F=1/2-1/2$	84183.977	5.30(3)	0.56(27)	0.008	0.005(1)	
<i>c</i> -HCC ¹³ CH	2 _{1,2} -1 _{0,1}	84185.635	5.27(3)	0.41(3)	0.327	0.142(14)	
¹³ CCH	$N=1-0$ $J=1/2-1/2$ $F_1=1-1$ $F=1/2-3/2$	84192.487	5.29(24)	0.40(20)	0.009	0.004(1)	
¹³ CCH	$N=1-0$ $J=1/2-1/2$ $F_1=1-1$ $F=3/2-3/2$	84206.865	5.30(3)	0.46(4)	0.021	0.010(1)	
CH ₃ CHO	2 _{1,2} -1 _{0,1} A	84219.749	5.22(3)	0.77(9)	0.013	0.011(1)	
¹³ CCH	$N=1-0$ $J=1/2-1/2$ $F_1=1-1$ $F=1/2-1/2$	84225.376	5.06(3)	0.42(9)	0.006	0.0026(2)	5
<i>c</i> -C ₃ H ₂ O	6 _{2,5} -5 _{2,4}	84310.158	5.28(3)	0.36(6)	0.009	0.0034(3)	
³⁴ SO	2 ₂ -1 ₁	84410.690	5.29(3)	0.42(4)	0.016	0.0073(7)	
DC ₃ N	10-9	84429.814	5.31(3)	0.38(3)	0.259	0.105(10)	
HCOOCH ₃	7 _{2,6} -6 _{2,5} E	84449.169	5.29(3)	0.29(4)	0.009	0.0026(2)	

Table A.1. continued.

Molecule	Transition	Frequency (MHz)	V_{LSR} (km s ⁻¹)	Δv (km s ⁻¹)	T_A^* peak (K)	$\int T_A^* dv$ (K km s ⁻¹)	Notes
HCOOCH ₃	7 _{2,6} -6 _{2,5} A	84454.754	5.35(22)	0.65(13)	0.008	0.005(1)	
CH ₃ OH	5 ₋₁ -4 ₀ E	84521.172			0.102	0.112(11)	1
c-C ₃ H ₂	3 _{2,2} -3 _{1,3}	84727.688	5.28(3)	0.46(3)	0.307	0.151(15)	
C ₂ H ₃ CN	9 _{0,9} -8 _{0,8}	84946.000	5.29(3)	0.56(4)	0.013	0.0078(7)	
c-C ₃ H ₂ O	6 _{3,4} -5 _{3,3}	84966.940	5.30(3)	0.57(12)	0.008	0.005(1)	
c-C ₃ H ₂ O	6 _{3,3} -5 _{3,2}	85081.876	5.30(3)	0.39(4)	0.009	0.0037(3)	
OCS	7-6	85139.103	5.32(3)	0.58(3)	0.120	0.074(7)	
D ₂ CS	3 _{0,3} -2 _{0,2}	85153.920	5.33(3)	0.39(12)	0.083	0.034(9)	
HC ¹⁸ O ⁺	1-0	85162.223	5.28(3)	0.49(3)	0.480	0.249(24)	
HC ₃ N	32-31	85201.340	5.31(3)	0.86(3)	0.047	0.043(4)	
C ¹³ CH	$N=1-0 J=3/2-1/2 F_1=2-1 F=5/2-3/2$	85229.335	5.36(3)	0.51(3)	0.077	0.041(4)	
C ¹³ CH	$N=1-0 J=3/2-1/2 F_1=2-1 F=3/2-1/2$	85232.805	5.38(3)	0.54(5)	0.047	0.027(2)	
C ¹³ CH	$N=1-0 J=3/2-1/2 F_1=1-0 F=1/2-1/2$	85247.728	5.34(3)	0.45(4)	0.028	0.013(1)	
C ¹³ CH	$N=1-0 J=3/2-1/2 F_1=1-0 F=3/2-1/2$	85256.988	5.35(3)	0.49(3)	0.049	0.026(2)	
H ¹⁵ N ¹³ C	1-0	85258.923	5.44(3)	0.56(10)	0.018	0.011(1)	
CH ₂ DOH	1 _{1,0} -1 _{0,1} e ₀	85296.727	5.10(3)	0.50(6)	0.026	0.014(1)	2
C ¹³ CH	$N=1-0 J=1/2-1/2 F_1=1-1 F=1/2-3/2$	85303.990					2
C ¹³ CH	$N=1-0 J=1/2-1/2 F_1=1-1 F=3/2-3/2$	85307.459	5.35(10)	0.56(4)	0.044	0.026(2)	
C ¹³ CH	$N=1-0 J=1/2-1/2 F_1=0-1 F=1/2-1/2$	85314.092	5.34(23)	0.66(8)	0.024	0.017(2)	
c-C ₃ H ₂	2 _{1,2} -1 _{0,1}	85338.894			2.407	2.267(226)	1
HCS ⁺	2-1	85347.890	5.36(3)	0.53(26)	0.276	0.156(77)	
HCCCHO	9 _{1,8} -8 _{1,7}	85361.195	5.25(52)	0.45(6)	0.010	0.005(1)	
CH ₃ ¹³ CCH	5 ₁ -4 ₁	85420.230	5.30(3)	0.48(7)	0.018	0.009(1)	
CH ₃ ¹³ CCH	5 ₀ -4 ₀	85421.857	5.31(3)	0.48(5)	0.019	0.010(1)	
CH ₃ CCH	5 ₃ -4 ₃	85442.601	5.37(13)	0.85(42)	0.011	0.010(4)	
CH ₃ CCH	5 ₂ -4 ₂	85450.766	5.30(13)	0.65(17)	0.096	0.066(26)	
CH ₃ CCH	5 ₁ -4 ₁	85455.667	5.30(13)	0.49(17)	0.885	0.459(45)	
CH ₃ CCH	5 ₀ -4 ₀	85457.300	5.29(13)	0.48(17)	1.001	0.508(50)	
CH ₃ C ₄ H	21 ₁ -20 ₁	85497.334	5.39(4)	0.47(11)	0.007	0.003(1)	
CH ₃ C ₄ H	21 ₀ -20 ₀	85498.167	5.25(3)	0.45(11)	0.009	0.005(1)	
HCO ₂ ⁺	4 _{0,4} -3 _{0,3}	85531.497	5.28(3)	0.42(3)	0.119	0.054(5)	
C ₄ H	$N=9-8 J=19/2-17/2$	85634.010	5.33(3)	0.49(3)	0.518	0.272(27)	
c-C ₃ HD	4 _{3,2} -4 _{2,3}	85643.318	5.37(52)	0.63(31)	0.008	0.005(2)	
c-C ₃ H ₂	4 _{3,2} -4 _{2,3}	85656.431	5.30(3)	0.69(3)	0.089	0.066(6)	
C ₄ H	$N=9-8 J=17/2-15/2$	85672.580	5.30(3)	0.50(3)	0.470	0.249(24)	
C ₂ H ₃ CN	9 _{2,7} -8 _{2,6}	85715.426	5.38(4)	0.48(13)	0.007	0.004(1)	5
NH ₂ D	1 _{1,1} -1 _{0,1} ortho $F=0-1$	85924.789	5.42(13)	0.49(17)	0.706	0.367(54)	
NH ₂ D	1 _{1,1} -1 _{0,1} ortho $F=2-1$	85925.703	5.35(13)	0.54(17)	0.857	0.490(54)	
NH ₂ D	1 _{1,1} -1 _{0,1} ortho $F=2-2$	85926.278	5.38(13)	0.66(17)	1.486	1.038(103)	3
NH ₂ D	1 _{1,1} -1 _{0,1} ortho $F=1-1$	85926.278					3
NH ₂ D	1 _{1,1} -1 _{0,1} ortho $F=1-2$	85926.885	5.41(13)	0.50(17)	0.786	0.415(54)	
NH ₂ D	1 _{1,1} -1 _{0,1} ortho $F=1-0$	85927.723	5.33(13)	0.47(17)	0.724	0.366(54)	
HC ¹⁵ N	1-0	86054.966	5.31(3)	0.56(3)	0.255	0.152(15)	
SO	2 ₂ -1 ₁	86093.950			0.444	0.254(25)	1
C ₂ S	7 ₆ -6 ₅	86181.391	5.25(3)	0.49(3)	0.191	0.100(10)	
H ¹³ CN	1-0 $F=1-1$	86338.735			0.452	0.317(31)	1
H ¹³ CN	1-0 $F=2-1$	86340.167			0.589	0.487(48)	1
H ¹³ CN	1-0 $F=0-1$	86342.254			0.246	0.160(16)	1
CH ₂ DCN	5 _{1,5} -4 _{1,4}	86458.272	5.33(3)	0.60(9)	0.011	0.007(1)	
trans-HCOOH	4 _{1,4} -3 _{1,3}	86546.189	5.31(3)	0.46(3)	0.024	0.012(1)	
HC ₃ NH ⁺	10-9	86578.136	5.12(3)	0.45(10)	0.008	0.004(1)	5
C ₃ O	9-8	86593.678	5.28(3)	0.41(3)	0.096	0.042(4)	
HCCO	$N=4-3 J=9/2-7/2 F=5-4$	86642.357	5.35(4)	0.45(8)	0.011	0.005(1)	
HCCO	$N=4-3 J=9/2-7/2 F=4-3$	86643.862	5.34(3)	0.41(8)	0.012	0.005(1)	
HCCO	$N=4-3 J=7/2-5/2 F=4-3$	86655.825	5.37(5)	0.64(14)	0.008	0.005(1)	
HCCO	$N=4-3 J=7/2-5/2 F=3-2$	86657.477	5.28(3)	0.44(12)	0.009	0.004(1)	
CH ₂ DOH	2 _{1,1} -2 _{0,2} e ₀	86668.751	5.07(3)	0.53(3)	0.036	0.020(2)	
HCO	1 _{0,1} -0 _{0,0} $J=3/2-1/2 F=2-1$	86670.760	5.43(3)	0.53(3)	0.148	0.083(8)	
HCO	1 _{0,1} -0 _{0,0} $J=3/2-1/2 F=1-0$	86708.360	5.41(3)	0.71(3)	0.118	0.089(8)	3
C ₃ S	15-14	86708.379					3
H ¹³ CO ⁺	1-0	86754.288			2.100	1.595(159)	1
CH ₃ C ₃ N	21 ₁ -20 ₁	86756.698	5.29(51)	0.44(21)	0.005	0.002(1)	5
CH ₃ C ₃ N	21 ₀ -20 ₀	86757.524	5.23(51)	0.73(36)	0.007	0.006(2)	
HCO	1 _{0,1} -0 _{0,0} $J=1/2-1/2 F=1-1$	86777.460	5.43(3)	0.50(3)	0.092	0.049(4)	
HCO	1 _{0,1} -0 _{0,0} $J=1/2-1/2 F=0-1$	86805.780	5.47(3)	0.48(3)	0.034	0.018(1)	
CH ₂ DCN	5 _{0,5} -4 _{0,4}	86833.937	5.28(3)	0.51(8)	0.017	0.009(2)	

Table A.1. continued.

Molecule	Transition	Frequency (MHz)	V_{LSR} (km s ⁻¹)	Δv (km s ⁻¹)	T_A^* peak (K)	$\int T_A^* dv$ (K km s ⁻¹)	Notes
SiO	2-1	86846.985			0.031	0.086(8)	1
HC ¹⁷ O ⁺	1-0 $F=5/2-3/2$	87056.966	5.32(3)	0.51(3)	0.037	0.020(1)	4
HC ¹⁷ O ⁺	1-0 $F=7/2-5/2$	87057.258	5.37(3)	0.45(3)	0.076	0.037(3)	4
HC ¹⁷ O ⁺	1-0 $F=5/2-5/2$	87058.294	5.35(3)	0.45(3)	0.058	0.028(2)	
HN ¹³ C	1-0	87090.825	5.38(3)	0.84(3)	1.587	1.428(142)	
CH ₂ DCN	5 _{1,4} -4 _{1,3}	87211.469	5.39(6)	0.38(8)	0.007	0.0028(2)	
C ₂ H	$N=1-0 J=3/2-1/2 F=1-1$	87284.105			0.842	0.536(53)	1
D ₂ CS	3 _{1,2} -2 _{1,1}	87302.662	5.36(3)	0.37(4)	0.017	0.007(1)	
C ₂ H ₃ CN	9 _{1,8} -8 _{1,7}	87312.812	5.23(51)	0.48(24)	0.010	0.005(2)	
C ₂ H	$N=1-0 J=3/2-1/2 F=2-1$	87316.898			1.540	1.662(166)	1
C ₂ H	$N=1-0 J=3/2-1/2 F=1-0$	87328.585			1.202	1.141(114)	1
C ₂ H	$N=1-0 J=1/2-1/2 F=1-1$	87401.989			1.244	1.169(116)	1
C ₂ H	$N=1-0 J=1/2-1/2 F=0-1$	87407.165			1.018	0.749(74)	1
C ₂ H	$N=1-0 J=1/2-1/2 F=1-0$	87446.470			0.802	0.533(53)	1
<i>cis</i> -HCOOH	4 _{0,4} -3 _{0,3}	87694.694	5.32(3)	0.43(7)	0.009	0.0040(4)	
HC ₃ N	33-32	87863.630	5.35(3)	0.86(3)	0.039	0.035(3)	
HNCO	4 _{0,4} -3 _{0,3} $F=3-3$	87924.351	5.32(26)	0.36(18)	0.053	0.020(10)	
HNCO	4 _{0,4} -3 _{0,3} $F=5-4 + F=4-3 + F=3-2$	87925.252	5.35(3)	0.45(3)	1.623	0.783(78)	
HNCO	4 _{0,4} -3 _{0,3} $F=4-4$	87925.915	5.32(35)	0.38(19)	0.057	0.023(11)	
HN ¹³ CO	4 _{0,4} -3 _{0,3}	87927.640	5.07(47)	0.39(19)	0.039	0.016(8)	
CH ₂ DOH	2 _{1,2} -1 _{1,1} e_0	88073.074	5.21(3)	0.47(5)	0.020	0.010(1)	
H ¹³ CCCN	10-9	88166.832	5.42(3)	0.48(3)	0.073	0.037(3)	
C ₄ D	$N=10-9 J=21/2-19/2$	88308.034	5.41(3)	0.35(6)	0.009	0.004(1)	
HC ₃ ¹⁵ N	10-9	88333.002	5.28(3)	0.49(9)	0.013	0.007(1)	
C ₄ D	$N=10-9 J=19/2-17/2$	88344.000	5.28(3)	0.42(8)	0.009	0.004(1)	
HCN	1-0 $F=1-1$	88630.416			0.735	1.447(144)	1, 4
HCN	1-0 $F=2-1$	88631.848			1.164	2.285(228)	1, 4
HCN	1-0 $F=0-1$	88633.936			0.867	1.013(101)	1
CH ₂ DOH	3 _{1,2} -3 _{0,3} e_0	88754.512	5.02(13)	0.49(16)	0.019	0.0100(9)	
NCCNH ⁺	10-9	88758.108	5.34(13)	0.30(15)	0.018	0.0057(5)	
HCOOCH ₃	7 _{1,6} -6 _{1,5} E	88843.187	5.25(13)	0.57(16)	0.012	0.0076(7)	
HCOOCH ₃	7 _{1,6} -6 _{1,5} A	88851.607	5.26(13)	0.40(16)	0.013	0.0055(5)	
H ¹⁵ NC	1-0	88865.715	5.36(3)	0.45(3)	0.682	0.325(32)	
H ₂ C ₄	10 _{1,10} -9 _{1,9}	88940.237	5.29(3)	0.56(4)	0.027	0.016(1)	
C ₃ N	$N=9-8 J=19/2-17/2$	89045.583	5.26(3)	0.46(3)	0.055	0.027(2)	
C ₃ N	$N=9-8 J=17/2-15/2$	89064.347	5.24(3)	0.46(3)	0.049	0.024(2)	
HCO ⁺	1-0	89188.525			2.338	4.440(444)	1
H ₂ C ₄	10 _{0,10} -9 _{0,9}	89314.548	5.12(3)	0.52(5)	0.028	0.016(1)	
HCOOCH ₃	8 _{1,8} -7 _{1,7} A	89316.642	5.27(3)	0.64(19)	0.010	0.007(1)	
CH ₂ DOH	2 _{0,2} -1 _{0,1} e_0	89407.817	5.08(4)	0.43(3)	0.120	0.055(5)	
HCCNC	9-8	89419.300	5.39(3)	0.43(3)	0.086	0.039(3)	
<i>trans</i> -HCOOH	4 _{0,4} -3 _{0,3}	89579.179	5.28(3)	0.55(3)	0.034	0.020(1)	
H ₂ C ₄	10 _{1,9} -9 _{1,8}	89687.047	5.27(3)	0.53(4)	0.030	0.017(1)	
C ₂ H ₅ OH	4 _{1,4} -3 _{0,3}	90117.601	5.26(3)	0.70(7)	0.009	0.007(1)	
HCOOCH ₃	7 _{2,5} -6 _{2,4} E	90145.723	5.26(5)	0.36(5)	0.010	0.0038(3)	
HCOOCH ₃	7 _{2,5} -6 _{2,4} A	90156.473	5.16(5)	0.79(12)	0.005	0.004(1)	
HCOOCH ₃	8 _{0,8} -7 _{0,7} E	90227.659	5.28(3)	0.45(4)	0.012	0.0058(5)	
HCOOCH ₃	8 _{0,8} -7 _{0,7} A	90229.624	5.32(3)	0.39(3)	0.012	0.0049(4)	
¹⁵ NNH ⁺	1-0 $F=1-1$	90263.487	5.33(3)	0.43(3)	0.030	0.014(1)	
¹⁵ NNH ⁺	1-0 $F=2-1$	90263.912	5.31(3)	0.46(3)	0.053	0.026(2)	
¹⁵ NNH ⁺	1-0 $F=0-1$	90264.504	5.35(3)	0.38(5)	0.010	0.0040(3)	
HCCCHO	3 _{1,3} -2 _{0,2}	90362.994	5.28(5)	0.49(6)	0.009	0.0046(4)	
HC ₃ N	34-33	90525.890	5.38(3)	0.89(4)	0.029	0.028(2)	
HC ¹³ CCN	10-9	90593.057	5.34(3)	0.51(3)	0.069	0.037(3)	
HCC ¹³ CN	10-9	90601.777	5.27(3)	0.54(3)	0.076	0.044(4)	
<i>cis</i> -HCOOH	4 _{1,3} -3 _{1,2}	90661.097	5.28(49)	0.42(20)	0.005	0.002(1)	
HNC	1-0	90663.568			2.049	3.189(318)	1
C ₂ S	7 ₇ -6 ₆	90686.381	5.31(3)	0.57(3)	0.151	0.092(9)	
CH ₃ OD	2 ₀ ⁺ -1 ₀ ⁺ A	90705.810	5.45(3)	0.53(4)	0.015	0.0084(8)	
CH ₂ DOH	2 _{1,1} -1 _{1,0} e_0	90779.841	5.06(3)	0.40(3)	0.026	0.011(1)	
CH ₃ C ₃ N	22 ₀ -21 ₀	90888.496	5.18(5)	0.75(25)	0.006	0.005(1)	5
¹³ C ³⁴ S	2-1	90926.026	5.30(5)	0.68(6)	0.011	0.008(1)	
CH ₃ OCH ₃	6 _{0,6} -5 _{1,5} AA	90937.508	5.27(13)	0.61(16)	0.008	0.0053(5)	
CH ₃ OCH ₃	6 _{0,6} -5 _{1,5} EE	90938.107	5.26(13)	0.49(16)	0.010	0.0051(5)	
CH ₃ OCH ₃	6 _{0,6} -5 _{1,5} $EA + AE$	90938.706	5.15(13)	0.65(16)	0.006	0.0044(4)	5
HC ₃ N	10-9 $F=10-10$	90977.443	5.29(49)	0.61(30)	0.023	0.015(7)	

Table A.1. continued.

Molecule	Transition	Frequency (MHz)	V_{LSR} (km s ⁻¹)	Δv (km s ⁻¹)	T_A^* peak (K)	$\int T_A^* dv$ (K km s ⁻¹)	Notes
HC ₃ N	10-9	90979.023			2.594	1.978(197)	1
HC ₃ N	10-9 $F=9-9$	90980.690	5.29(49)	0.53(26)	0.021	0.012(6)	
HDCS	3 _{1,3} -2 _{1,2}	91171.067	5.41(3)	0.41(3)	0.063	0.028(2)	
N ¹⁵ NH ⁺	1-0 $F=1-1$	91204.262	5.33(3)	0.46(3)	0.041	0.020(2)	
N ¹⁵ NH ⁺	1-0 $F=2-1$	91205.991	5.33(3)	0.48(3)	0.070	0.036(3)	
N ¹⁵ NH ⁺	1-0 $F=0-1$	91208.517	5.33(3)	0.48(4)	0.019	0.010(1)	
<i>c</i> -C ₃ H	2 _{1,2} -1 _{1,1} $J=5/2-1/2 F=2-1$	91431.915	5.34(3)	0.42(5)	0.011	0.0047(4)	
<i>c</i> -C ₃ H	2 _{1,2} -1 _{1,1} $J=5/2-3/2 F=3-2$	91494.349	5.36(3)	0.45(3)	0.417	0.200(20)	
<i>c</i> -C ₃ H	2 _{1,2} -1 _{1,1} $J=5/2-3/2 F=2-1$	91497.608	5.42(3)	0.45(3)	0.274	0.130(13)	
<i>c</i> -C ₃ H	2 _{1,2} -1 _{1,1} $J=5/2-3/2 F=2-2$	91512.969	5.40(3)	0.47(3)	0.038	0.019(1)	
HCCCHO	10 _{1,10} -9 _{1,9}	91572.516	5.24(3)	0.38(8)	0.007	0.0028(2)	
CH ₂ DOH	4 _{1,3} -4 _{0,4} e_0	91586.845	4.97(3)	0.44(8)	0.008	0.004(1)	
<i>c</i> -C ₃ H	2 _{1,2} -1 _{1,1} $J=3/2-1/2 F=1-1$	91681.696	5.31(3)	0.47(6)	0.039	0.020(2)	
<i>c</i> -C ₃ H	2 _{1,2} -1 _{1,1} $J=3/2-1/2 F=1-0$	91692.752	5.31(13)	0.46(15)	0.101	0.049(4)	
<i>c</i> -C ₃ H	2 _{1,2} -1 _{1,1} $J=3/2-1/2 F=2-1$	91699.471	5.36(3)	0.47(15)	0.261	0.132(13)	
<i>c</i> -C ₃ H	2 _{1,2} -1 _{1,1} $J=3/2-3/2 F=1-1$	91747.373	5.33(3)	0.47(3)	0.048	0.024(2)	
HSCN	8 _{0,8} -7 _{0,7}	91750.636	5.29(3)	0.49(6)	0.011	0.0056(5)	
HCNO	4-3	91751.320	5.33(3)	0.42(3)	0.044	0.019(1)	
<i>c</i> -C ₃ H	2 _{1,2} -1 _{1,1} $J=3/2-3/2 F=2-2$	91780.518	5.39(3)	0.45(3)	0.047	0.022(2)	
C ₂ ³⁴ S	7 ₈ -6 ₇	91913.529	5.30(3)	0.58(4)	0.022	0.014(1)	
CH ₃ CN	5 ₃ -4 ₃ $F=6-5$	91971.309	5.31(3)	0.30(4)	0.017	0.005(1)	
CH ₃ CN	5 ₁ -4 ₁	91985.314	5.31(3)	0.79(3)	0.069	0.058(5)	
CH ₃ CN	5 ₀ -4 ₀	91987.088	5.31(3)	0.66(3)	0.091	0.064(6)	
C ₂ O	4 ₅ -3 ₄	92227.853	5.27(3)	0.58(6)	0.017	0.011(1)	
C ₂ O	4 ₄ -3 ₃	92363.286	5.40(3)	0.46(7)	0.011	0.006(1)	
<i>c</i> -C ₃ D ₂	4 _{1,3} -4 _{0,4}	92394.180	5.40(3)	0.65(10)	0.011	0.008(1)	
C ₂ H ₃ CN	10 _{1,10} -9 _{1,9}	92426.250	5.24(3)	0.28(8)	0.010	0.003(1)	
C ₃ S	16-15	92488.490	5.29(3)	0.41(17)	0.051	0.023(8)	
¹³ CS	2-1	92494.308			0.269	0.244(24)	1
<i>c</i> -C ₃ H ₂ O	7 _{1,7} -6 _{1,6}	92517.433	5.29(3)	0.35(3)	0.032	0.012(1)	
DC ₃ N	11-10	92872.375	5.29(3)	0.40(3)	0.194	0.082(8)	
HDCS	3 _{0,3} -2 _{0,2}	92981.601	5.33(3)	0.41(3)	0.205	0.089(8)	
HCCCHO	10 _{0,10} -9 _{0,9}	93043.287	5.15(3)	0.50(5)	0.019	0.010(1)	
<i>trans</i> -HCOOH	4 _{2,2} -3 _{2,1}	93098.363	5.31(3)	0.36(3)	0.024	0.009(1)	
CNCN	9-8	93132.327	5.30(48)	0.54(9)	0.011	0.006(1)	
N ₂ H ⁺	1-0 $F_1=1-1 F=0-1$	93171.616	5.31(3)	0.50(3)	2.205	1.175(117)	4
N ₂ H ⁺	1-0 $F_1=1-1 F=2-1 + F=2-2$	93171.911	5.40(3)	0.52(3)	2.808	1.555(155)	4
N ₂ H ⁺	1-0 $F_1=1-1 F=1-0 + F=1-1 + F=1-2$	93172.048	5.31(3)	0.51(3)	2.462	1.340(133)	4
N ₂ H ⁺	1-0 $F_1=2-1 F=2-1 + F=2-2$	93173.473	5.36(13)	0.61(15)	3.176	2.050(220)	4
N ₂ H ⁺	1-0 $F_1=2-1 F=3-2$	93173.770	5.39(13)	0.58(15)	3.586	2.196(220)	4
N ₂ H ⁺	1-0 $F_1=2-1 F=1-0 + F=1-1 + F=1-2$	93173.964	5.35(13)	0.55(15)	2.392	1.406(220)	4
N ₂ H ⁺	1-0 $F_1=0-1$	93176.260	5.35(13)	0.55(15)	2.900	1.689(168)	
HC ₅ N	35-34	93188.123	5.35(3)	0.75(4)	0.028	0.022(2)	
S ¹⁸ O	2 ₃ -1 ₂	93267.270	4.95(3)	0.43(3)	0.076	0.035(3)	
HNC ₃	10-9	93364.241	5.30(3)	0.56(8)	0.014	0.008(1)	
C ¹³ CS	7 ₈ -6 ₇ $F=9-8$	93446.679	5.09(3)	0.55(18)	0.010	0.006(2)	2
C ¹³ CS	7 ₈ -6 ₇ $F=8-7$	93447.430	5.57(6)	0.31(14)	0.008	0.003(1)	2
CH ₃ CCD	6 ₁ -5 ₁	93454.331	5.27(3)	0.36(3)	0.064	0.025(2)	
CH ₃ CCD	6 ₀ -5 ₀	93456.044	5.26(3)	0.36(3)	0.067	0.026(2)	
CH ₃ CHO	5 _{1,5} -4 _{1,4} A	93580.909	5.30(3)	0.67(3)	0.036	0.026(2)	
CH ₃ CHO	5 _{1,5} -4 _{1,4} E	93595.235	5.31(3)	0.56(3)	0.038	0.022(2)	
HNCS	8 _{0,8} -7 _{0,7}	93830.050	5.37(4)	0.88(13)	0.008	0.007(1)	
C ₂ S	7 ₈ -6 ₇	93870.107	5.31(3)	0.47(3)	0.567	0.284(28)	
HDCCO	5 _{0,5} -4 _{0,4}	94088.936	5.29(3)	0.42(4)	0.021	0.009(1)	
C ₂ H ₃ CN	10 _{0,10} -9 _{0,9}	94276.636	5.29(3)	0.36(5)	0.013	0.005(1)	
<i>c</i> -C ₃ D ₂	3 _{0,3} -2 _{1,2}	94371.354	5.33(3)	0.35(3)	0.064	0.024(2)	
¹³ CH ₃ OH	2 ₋₁ -1 ₋₁ E	94405.163	5.13(3)	0.55(3)	0.028	0.017(1)	
¹³ CH ₃ OH	2 ₀ -1 ₀ $A+$	94407.129	5.31(7)	0.70(3)	0.035	0.026(2)	
¹³ CH ₂ DCCH	6 _{0,6} -5 _{0,5}	94729.009	5.19(5)	0.45(11)	0.007	0.003(1)	
HDCS	3 _{1,2} -2 _{1,1}	94828.488	5.26(3)	0.38(3)	0.060	0.024(2)	
C ₄ H	$N=10-9 J=21/2-19/2$	95150.393	5.34(3)	0.44(3)	0.336	0.157(15)	
C ₄ H	$N=10-9 J=19/2-17/2$	95188.947	5.31(3)	0.47(3)	0.295	0.147(14)	
HC ₃ NH ⁺	11-10	95235.533	5.24(3)	0.31(6)	0.007	0.0024(2)	5
<i>l</i> -C ₃ HD	5 _{1,5} -4 _{1,4}	95703.443	5.37(3)	0.33(7)	0.005	0.0017(1)	5
HC ₅ N	36-35	95850.335	5.33(3)	0.91(3)	0.019	0.018(1)	
CH ₃ OH	2 ₁ -1 ₁ $A+$	95914.310	5.39(3)	1.02(3)	0.024	0.026(2)	

Table A.1. continued.

Molecule	Transition	Frequency (MHz)	V_{LSR} (km s ⁻¹)	Δv (km s ⁻¹)	T_A^* peak (K)	$\int T_A^* dv$ (K km s ⁻¹)	Notes
CH ₃ CHO	5 _{0,5} -4 _{0,4} E	95947.437	5.28(3)	0.64(3)	0.051	0.035(3)	
CH ₃ CHO	5 _{0,5} -4 _{0,4} A	95963.459	5.32(3)	0.61(3)	0.052	0.034(3)	
<i>c</i> -C ₃ HD	2 _{1,1} -1 _{1,0}	95994.082	5.30(3)	0.50(3)	0.169	0.090(9)	
HCOOCH ₃	8 _{2,7} -7 _{2,6} E	96070.725	5.27(3)	0.44(4)	0.008	0.0040(4)	
HCOOCH ₃	8 _{2,7} -7 _{2,6} A	96076.845	5.28(5)	0.47(5)	0.008	0.0041(4)	
S ¹⁷ O	2 ₃ -1 ₂ F=11/2-9/2	96085.277	5.34(3)	0.50(10)	0.005	0.0027(2)	
C ₃ O	10-9	96214.619	5.31(3)	0.42(3)	0.059	0.027(2)	
CH ₃ CHO	5 _{2,4} -4 _{2,3} A	96274.252	5.36(3)	0.63(10)	0.006	0.0043(4)	
C ³⁴ S	2-1	96412.950			0.495	0.487(48)	1
CH ₃ CHO	5 _{2,4} -4 _{2,3} E	96425.614	5.26(3)	1.07(11)	0.009	0.010(1)	
CH ₃ CHO	5 _{2,3} -4 _{2,2} E	96475.524	5.28(13)	0.68(15)	0.011	0.0077(7)	
CH ₃ CHO	5 _{2,3} -4 _{2,2} A	96632.663	5.42(7)	0.68(8)	0.008	0.0057(5)	
CH ₂ DCCH	6 _{1,6} -5 _{1,5}	96691.587	5.26(3)	0.39(3)	0.101	0.042(4)	
CH ₃ OH	2 ₋₁ -1 ₋₁ E	96739.358			1.262	1.027(102)	1
CH ₃ OH	2 ₀ -1 ₀ A+	96741.371			1.696	1.384(138)	1
<i>cis</i> -HCOOH	1 _{1,1} -0 _{0,0}	96743.447	5.43(13)	0.54(15)	0.004	0.002(1)	5
CH ₃ OH	2 ₀ -1 ₀ E	96744.545			0.218	0.187(18)	1
CH ₃ OH	2 ₁ -1 ₁ E	96755.501	5.34(3)	0.83(3)	0.039	0.034(3)	
<i>l</i> -C ₃ HD	5 _{0,5} -4 _{0,4}	96902.196	5.32(3)	0.42(3)	0.016	0.0070(7)	
C ₂ H ₃ CN	10 _{1,9} -9 _{1,8}	96982.440	5.29(3)	0.49(8)	0.006	0.0031(3)	
H ¹³ CCCN	11-10	96983.001	5.30(3)	0.50(3)	0.042	0.022(2)	
CH ₂ DCCH	6 _{2,5} -5 _{2,4}	97077.804	5.25(3)	0.36(3)	0.018	0.0069(6)	
CH ₂ DCCH	6 _{0,6} -5 _{0,5}	97080.728	5.26(3)	0.36(3)	0.187	0.072(7)	
CH ₂ DCCH	6 _{2,4} -5 _{2,3}	97081.710	5.29(3)	0.33(3)	0.020	0.0072(7)	
C ₄ D	N=11-10 J=23/2-21/2	97139.974	5.35(3)	0.32(6)	0.007	0.0023(2)	
HC ₃ ¹⁵ N	11-10	97165.829	5.32(7)	0.44(22)	0.009	0.004(2)	
C ³³ S	J=2-1 F=3/2-3/2	97169.471	5.37(3)	0.62(30)	0.015	0.010(5)	
C ³³ S	J=2-1 F=5/2-3/2	97171.801			0.093	0.087(8)	1, 3
C ³³ S	J=2-1 F=7/2-5/2	97171.819					1, 3
C ³³ S	J=2-1 F=1/2-1/2	97172.031					1, 3
C ³³ S	J=2-1 F=5/2-5/2	97174.956	5.30(28)	0.86(43)	0.014	0.013(6)	4
C ³³ S	J=2-1 F=3/2-1/2	97175.257	5.28(20)	0.61(30)	0.013	0.009(4)	4
C ₄ D	N=11-10 J=21/2-19/2	97175.928	5.25(27)	0.33(16)	0.006	0.002(1)	
OCS	8-7	97301.209	5.32(3)	0.55(3)	0.092	0.054(5)	
CH ₂ DCCH	6 _{1,5} -5 _{1,4}	97472.736	5.26(3)	0.39(3)	0.106	0.044(4)	
CH ₃ OH	2 ₁ -1 ₁ A-	97582.798	5.38(3)	0.85(3)	0.039	0.035(3)	
H ₂ ¹³ CS	3 _{1,3} -2 _{1,2}	97632.202	5.25(3)	0.41(7)	0.007	0.0030(2)	
NCCNH ⁺	11-10	97633.424	5.30(3)	0.35(6)	0.006	0.0024(2)	
³⁴ SO	2 ₃ -1 ₂	97715.317	5.04(3)	0.42(3)	0.385	0.173(17)	
<i>c</i> -C ₃ D ₂	3 _{1,3} -2 _{0,2}	97761.978	5.31(3)	0.39(3)	0.112	0.047(4)	
H ₂ C ₄	11 _{1,11} -10 _{1,10}	97833.632	5.29(3)	0.43(3)	0.020	0.0089(8)	
CS	2-1	97980.953			1.781	3.513(351)	1
<i>l</i> -C ₃ H	² Π _{1/2} J=9/2-7/2 F=5-4 <i>f</i>	97995.166	5.22(3)	0.47(3)	0.097	0.048(4)	
<i>l</i> -C ₃ H	² Π _{1/2} J=9/2-7/2 F=4-3 <i>f</i>	97995.913	5.21(3)	0.43(3)	0.076	0.034(3)	
<i>l</i> -C ₃ H	² Π _{1/2} J=9/2-7/2 F=5-4 <i>e</i>	98011.611	5.23(3)	0.44(3)	0.100	0.047(4)	
<i>l</i> -C ₃ H	² Π _{1/2} J=9/2-7/2 F=4-3 <i>e</i>	98012.524	5.16(3)	0.42(3)	0.078	0.035(3)	
CH ₂ DOH	4 _{0,4} -3 _{1,3} <i>e</i> ₀	98031.213	4.87(3)	0.46(3)	0.018	0.009(1)	
<i>c</i> -C ₃ H ₂ O	7 _{2,6} -6 _{2,5}	98182.078	5.28(13)	0.40(14)	0.006	0.0026(2)	
H ₂ C ₄	11 _{0,11} -10 _{0,10}	98244.930	5.17(3)	0.57(5)	0.012	0.0072(7)	
C ₃ S	17-16	98268.516	5.30(5)	0.42(3)	0.031	0.014(1)	
³³ SO	2 ₃ -1 ₂ F=3/2-3/2	98460.488	5.20(3)	0.50(11)	0.005	0.0025(2)	5
³³ SO	2 ₃ -1 ₂ F=3/2-1/2	98474.602	5.14(13)	0.38(14)	0.008	0.0031(3)	
³³ SO	2 ₃ -1 ₂ F=5/2-3/2	98482.302	5.23(13)	0.42(14)	0.012	0.0053(5)	
³³ SO	2 ₃ -1 ₂ F=7/2-5/2	98489.232	5.25(45)	0.44(3)	0.021	0.010(1)	
³³ SO	2 ₃ -1 ₂ F=9/2-7/2	98493.642	5.24(3)	0.39(3)	0.035	0.014(1)	
HC ₃ N	37-36	98512.524	5.39(3)	0.98(6)	0.022	0.023(2)	
H ₂ C ₄	11 _{1,10} -10 _{1,9}	98655.094	5.26(19)	0.56(4)	0.019	0.011(1)	
CH ₃ CHO	5 _{1,4} -4 _{1,3} E	98863.314	5.27(13)	0.65(14)	0.040	0.028(2)	
CH ₃ CHO	5 _{1,4} -4 _{1,3} A	98900.945	5.31(3)	0.65(5)	0.039	0.027(2)	
C ₃ N	N=10-9 J=21/2-19/2	98940.009	5.26(3)	0.41(3)	0.035	0.015(1)	
C ₃ N	N=10-9 J=19/2-17/2	98958.770	5.26(3)	0.53(3)	0.030	0.017(1)	
HCCCHO	4 _{1,4} -3 _{0,3}	99039.070	5.25(3)	0.48(3)	0.010	0.0052(5)	
H ₂ ¹³ CS	3 _{0,3} -2 _{0,2}	99077.843	5.33(3)	0.49(8)	0.008	0.0042(4)	
<i>c</i> -C ₃ H ₂ O	7 _{3,5} -6 _{3,4}	99204.772	5.27(3)	0.35(7)	0.005	0.0019(1)	
SO	2 ₃ -1 ₂	99299.870			2.386	1.609(160)	1

Table A.1. continued.

Molecule	Transition	Frequency (MHz)	V_{LSR} (km s ⁻¹)	Δv (km s ⁻¹)	T_A^* peak (K)	$\int T_A^* dv$ (K km s ⁻¹)	Notes
CH ₃ OCH ₃	4 _{1,4} -3 _{0,3} EA + AE	99324.363	5.29(3)	0.46(5)	0.012	0.0059(5)	
CH ₃ OCH ₃	4 _{1,4} -3 _{0,3} EE	99325.217	5.31(3)	0.51(4)	0.015	0.0081(8)	
CH ₃ OCH ₃	4 _{1,4} -3 _{0,3} AA	99326.072	5.31(3)	0.45(7)	0.009	0.004(1)	
HCCNC	10-9	99354.250	5.28(3)	0.46(3)	0.054	0.026(2)	
c-C ₃ H ₂ O	7 _{3,4} -6 _{3,3}	99461.077	5.28(3)	0.43(6)	0.009	0.0039(3)	
CH ₃ C ¹³ CH	6 ₁ -5 ₁	99478.690	5.22(3)	0.40(3)	0.017	0.007(1)	
CH ₃ C ¹³ CH	6 ₀ -5 ₀	99480.520	5.14(3)	0.44(3)	0.018	0.008(1)	
HC ¹³ CCN	11-10	99651.849	5.29(4)	0.53(4)	0.045	0.025(2)	
HCC ¹³ CN	11-10	99661.467	5.30(3)	0.51(3)	0.049	0.027(2)	
CH ₂ CN	5 _{1,5} -4 _{1,4} J=9/2-7/2 F=7/2-5/2	99668.885	5.25(13)	0.28(13)	0.007	0.0019(1)	2
CH ₂ CN	5 _{1,5} -4 _{1,4} J=9/2-7/2 F=11/2-9/2	99669.243	5.33(13)	0.44(14)	0.009	0.0043(4)	
CH ₂ CN	5 _{1,5} -4 _{1,4} J=11/2-9/2 F=9/2-7/2	99689.121	5.30(4)	0.43(9)	0.007	0.0032(3)	
CH ₂ CN	5 _{1,5} -4 _{1,4} J=11/2-9/2 F=11/2-9/2	99689.833	6.01(4)	0.69(10)	0.008	0.006(1)	6
CH ₂ CN	5 _{1,5} -4 _{1,4} J=11/2-9/2 F=13/2-11/2	99689.833	5.17(3)	0.53(7)	0.011	0.006(1)	6
¹³ CH ₃ CCH	6 ₁ -5 ₁	99754.700	5.28(3)	0.38(3)	0.016	0.0066(6)	
¹³ CH ₃ CCH	6 ₀ -5 ₀	99756.550	5.27(3)	0.40(3)	0.017	0.0072(7)	
H ₂ C ³⁴ S	3 _{1,3} -2 _{1,2}	99774.122	5.39(3)	0.52(3)	0.022	0.012(1)	
C ₂ S	8 ₇ -7 ₆	99866.521	5.35(3)	0.55(3)	0.117	0.068(6)	
SO	5 ₄ -4 ₄	100029.558	5.59(3)	0.92(10)	0.008	0.007(1)	
HC ₃ N	11-10 F=11-11	100074.832	5.30(13)	0.38(14)	0.014	0.005(2)	
HC ₃ N	11-10	100076.392			1.947	1.473(147)	1
HC ₃ N	11-10 F=10-10	100078.078	5.29(13)	0.48(14)	0.008	0.004(2)	
HCOOCH ₃	9 _{1,9} -8 _{1,8} E	100078.608	5.29(13)	0.58(14)	0.004	0.003(1)	5
HCOOCH ₃	9 _{1,9} -8 _{1,8} A	100080.542	5.32(13)	0.46(14)	0.008	0.004(1)	
H ₂ CCO	5 _{1,5} -4 _{1,4}	100094.514	5.30(2)	0.50(2)	0.112	0.060(6)	
NS ⁺	2-1 F=2-2	100196.674	5.37(13)	0.64(14)	0.007	0.005(1)	
NS ⁺	2-1 F=1-0	100196.982	5.30(13)	0.50(14)	0.010	0.005(1)	
NS ⁺	2-1 F=2-1	100198.474	5.03(13)	0.73(14)	0.035	0.027(2)	3
NS ⁺	2-1 F=3-2	100198.613					3
NS ⁺	2-1 F=1-1	100201.410	5.23(13)	0.45(14)	0.007	0.003(1)	
H ₂ NCO ⁺	5 _{1,5} -4 _{1,4}	100307.079	5.37(4)	0.49(4)	0.008	0.0040(4)	
DCO ₂ ⁺	5 _{0,5} -4 _{0,4}	100359.521	5.25(11)	0.31(7)	0.005	0.0015(1)	5
HCOOCH ₃	8 _{1,7} -7 _{1,6} E	100482.241	5.28(2)	0.41(6)	0.009	0.0039(3)	
HCOOCH ₃	8 _{1,7} -7 _{1,6} A	100490.682	5.29(8)	0.90(18)	0.006	0.006(1)	
N ₂ O	4-3	100491.740	5.39(4)	0.47(7)	0.008	0.0039(3)	
CH ₃ NC	5 ₁ -4 ₁	100524.249	5.14(4)	0.91(25)	0.005	0.005(1)	
CH ₃ NC	5 ₀ -4 ₀	100526.541	5.37(2)	0.72(7)	0.008	0.006(1)	
H ₂ ¹³ CS	3 _{1,2} -2 _{1,1}	100534.751	5.43(2)	0.40(6)	0.008	0.0034(3)	
CH ₂ CN	5 _{0,5} -4 _{0,4} J=11/2-9/2 F ₁ =13/2-11/2 F=15/2-13/2	100598.383	5.29(2)	0.83(6)	0.059	0.052(5)	3
CH ₂ CN	5 _{0,5} -4 _{0,4} J=11/2-9/2 F ₁ =13/2-11/2 F=13/2-11/2	100598.383					3
CH ₂ CN	5 _{0,5} -4 _{0,4} J=11/2-9/2 F ₁ =13/2-11/2 F=11/2-9/2	100598.383					3
CH ₂ CN	5 _{0,5} -4 _{0,4} J=11/2-9/2 F ₁ =11/2-9/2 F=9/2-7/2	100599.499	5.38(4)	0.51(15)	0.019	0.010(2)	
CH ₂ CN	5 _{0,5} -4 _{0,4} J=11/2-9/2 F ₁ =11/2-9/2 F=11/2-9/2	100599.943	5.33(2)	0.49(10)	0.026	0.014(2)	2
CH ₂ CN	5 _{0,5} -4 _{0,4} J=11/2-9/2 F ₁ =11/2-9/2 F=13/2-11/2	100600.602	5.32(2)	0.60(10)	0.036	0.023(3)	3
CH ₂ CN	5 _{0,5} -4 _{0,4} J=11/2-9/2 F ₁ =9/2-7/2 F=7/2-5/2	100600.602					3
CH ₂ CN	5 _{0,5} -4 _{0,4} J=11/2-9/2 F ₁ =9/2-7/2 F=9/2-7/2	100601.354	5.32(2)	0.48(20)	0.019	0.010(4)	2
CH ₂ CN	5 _{0,5} -4 _{0,4} J=11/2-9/2 F ₁ =9/2-7/2 F=11/2-9/2	100602.459	5.39(26)	0.51(25)	0.007	0.004(2)	2
CH ₂ CN	5 _{0,5} -4 _{0,4} J=9/2-7/2 F ₁ =9/2-7/2 F=11/2-9/2	100606.271	5.30(6)	0.60(21)	0.028	0.018(4)	
CH ₂ CN	5 _{0,5} -4 _{0,4} J=9/2-7/2 F ₁ =9/2-7/2 F=9/2-7/2	100607.373	5.32(6)	0.47(19)	0.021	0.010(3)	2
CH ₂ CN	5 _{0,5} -4 _{0,4} J=9/2-7/2 F ₁ =9/2-7/2 F=7/2-5/2	100608.257	5.30(15)	0.53(26)	0.014	0.008(3)	2
CH ₂ CN	5 _{0,5} -4 _{0,4} J=9/2-7/2 F ₁ =11/2-9/2 F=13/2-11/2	100608.832	5.30(13)	0.53(14)	0.032	0.018(1)	2
CH ₂ CN	5 _{0,5} -4 _{0,4} J=9/2-7/2 F ₁ =11/2-9/2 F=11/2-9/2	100609.210	5.34(13)	0.47(14)	0.025	0.012(1)	
CH ₂ CN	5 _{0,5} -4 _{0,4} J=9/2-7/2 F ₁ =11/2-9/2 F=9/2-7/2	100609.663	5.35(13)	0.48(14)	0.023	0.012(1)	2, 3
CH ₂ CN	5 _{0,5} -4 _{0,4} J=9/2-7/2 F ₁ =7/2-5/2 F=7/2-5/2	100609.663					2, 3
CH ₂ CN	5 _{0,5} -4 _{0,4} J=9/2-7/2 F ₁ =7/2-5/2 F=9/2-7/2	100610.152	5.40(13)	0.83(14)	0.020	0.017(1)	3
CH ₂ CN	5 _{0,5} -4 _{0,4} J=9/2-7/2 F ₁ =7/2-5/2 F=5/2-3/2	100610.152					3
c-C ₃ D	2 _{1,1} -1 _{1,0} J=5/2-3/2 F=7/2-5/2	100807.790	5.22(2)	0.35(3)	0.020	0.008(1)	3
c-C ₃ D	2 _{1,1} -1 _{1,0} J=5/2-3/2 F=5/2-3/2	100807.840					3
c-C ₃ D	2 _{1,1} -1 _{1,0} J=5/2-3/2 F=3/2-1/2	100807.987					3
CH ₃ SH	4 ₋₁ -3 ₋₁ E	101029.707	5.29(8)	0.50(10)	0.008	0.004(1)	2
H ₂ CCO	5 _{0,5} -4 _{0,4}	101036.630	5.32(2)	0.50(2)	0.067	0.035(3)	
H ₂ NCO ⁺	5 _{0,5} -4 _{0,4}	101131.138	5.43(10)	0.73(26)	0.006	0.005(1)	
CH ₃ SH	4 ₀ -3 ₀ A+	101139.111	5.41(2)	0.88(5)	0.020	0.019(1)	
CH ₃ SH	4 ₀ -3 ₀ E	101139.632	5.39(14)	0.73(4)	0.024	0.018(1)	
HC ₃ N	38-37	101174.677	5.36(2)	0.71(5)	0.021	0.016(1)	
H ₂ C ³⁴ S	3 _{0,3} -2 _{0,2}	101284.338	5.32(2)	0.64(5)	0.022	0.015(1)	3

Table A.1. continued.

Molecule	Transition	Frequency (MHz)	V_{LSR} (km s ⁻¹)	Δv (km s ⁻¹)	T_A^* peak (K)	$\int T_A^* dv$ (K km s ⁻¹)	Notes
CH ₃ SH	4 ₁ -3 ₁ E	101284.348					3
DC ₃ N	12-11	101314.818	5.31(2)	0.43(2)	0.108	0.049(4)	
CH ₃ CHO	3 _{1,3} -2 _{0,2} E	101343.441	5.33(2)	0.56(7)	0.017	0.010(1)	
H ₂ CS	3 _{1,3} -2 _{1,2}	101477.810			0.580	0.404(40)	1
CH ₂ CN	5 _{1,4} -4 _{1,3} J=9/2-7/2 F=11/2-9/2	101522.773	5.43(10)	0.51(8)	0.013	0.007(1)	4
CH ₂ CN	5 _{1,4} -4 _{1,3} J=9/2-7/2 F=9/2-7/2	101523.088	5.33(8)	0.93(15)	0.010	0.010(1)	4
CH ₂ CN	5 _{1,4} -4 _{1,3} J=9/2-7/2 F=7/2-5/2	101523.657	5.18(6)	0.95(15)	0.008	0.008(1)	
CH ₂ CN	5 _{1,4} -4 _{1,3} J=11/2-9/2	101532.055	5.32(2)	0.78(9)	0.024	0.020(2)	
CH ₃ CHO	3 _{1,3} -2 _{0,2} A	101892.414	5.19(44)	0.62(8)	0.013	0.009(1)	
H ₂ NCO ⁺	5 _{1,4} -4 _{1,3}	101955.873	5.17(12)	0.49(11)	0.010	0.005(1)	
DNCO	5 _{0,5} -4 _{0,4}	101963.694	5.38(10)	0.39(2)	0.065	0.028(2)	
H ₂ CCO	5 _{1,4} -4 _{1,3}	101981.429	5.26(2)	0.55(2)	0.117	0.068(6)	
³⁴ SO ₂	3 _{1,3} -2 _{0,2}	102031.878	5.24(2)	0.29(4)	0.011	0.0034(3)	
c-HC ¹³ CCD	3 _{0,3} -2 _{1,2}	102143.545	5.29(2)	0.57(13)	0.008	0.005(1)	
c-C ₃ D ₂	3 _{1,2} -2 _{2,1}	102248.513	5.32(28)	0.41(6)	0.012	0.005(1)	
HCCCHO	11 _{0,11} -10 _{0,10}	102298.030	5.13(13)	0.41(14)	0.014	0.0062(6)	2
c-HCC ¹³ CD	3 _{0,3} -2 _{1,2}	102305.490	5.21(13)	0.31(14)	0.014	0.0047(4)	2
c-H ¹³ CCCD	3 _{0,3} -2 _{1,2}	102422.058	5.33(2)	0.35(3)	0.013	0.0047(4)	
c-C ₃ HD	4 _{1,3} -4 _{0,4}	102423.019	5.27(2)	0.41(2)	0.031	0.014(1)	
CH ₃ ¹³ CCH	6 ₁ -5 ₁	102503.460	5.18(3)	0.49(5)	0.014	0.007(1)	
CH ₃ ¹³ CCH	6 ₀ -5 ₀	102505.410	5.19(2)	0.58(5)	0.018	0.011(1)	
CH ₃ CCH	6 ₃ -5 ₃	102530.348	5.33(43)	0.69(34)	0.016	0.011(5)	
CH ₃ CCH	6 ₂ -5 ₂	102540.145	5.30(8)	0.53(23)	0.118	0.067(24)	
CH ₃ CCH	6 ₁ -5 ₁	102546.024	5.29(2)	0.49(2)	0.803	0.417(41)	
CH ₃ CCH	6 ₀ -5 ₀	102547.984	5.30(2)	0.49(2)	0.877	0.460(46)	
H ₂ C ³⁴ S	3 _{1,2} -2 _{1,1}	102807.385	5.43(2)	0.62(4)	0.023	0.015(1)	
l-C ₃ H ₂	5 _{1,5} -4 _{1,4}	102992.379	5.27(43)	0.44(2)	0.115	0.054(5)	
H ₂ CS	3 _{0,3} -2 _{0,2}	103040.452			0.503	0.317(31)	1
c-C ₃ H ₂ O	7 _{1,6} -6 _{1,5}	103069.925	5.31(2)	0.48(4)	0.021	0.011(1)	
HCOOCH ₃	8 _{2,6} -7 _{2,5} E	103466.572	5.24(13)	0.63(14)	0.007	0.0046(4)	
HCOOCH ₃	8 _{2,6} -7 _{2,5} A	103478.663	5.27(4)	0.66(13)	0.008	0.006(1)	
CNCN	10-9	103479.802	5.38(7)	0.47(4)	0.014	0.0069(6)	
C ₂ S	8 ₈ -7 ₇	103640.759	5.35(2)	0.64(2)	0.098	0.066(6)	
HC ₃ N	39-38	103836.817	5.49(8)	0.93(6)	0.019	0.019(1)	
l-C ₃ H ₂	5 _{0,5} -4 _{0,4}	103952.926	5.32(2)	0.45(2)	0.074	0.035(3)	
SO ₂	3 _{1,3} -2 _{0,2}	104029.418	5.27(2)	0.42(2)	0.242	0.107(10)	
C ₃ S	18-17	104048.455	5.36(2)	0.55(5)	0.015	0.009(1)	
C ₂ ³⁴ S	8 ₉ -7 ₈	104109.331	5.30(2)	0.54(5)	0.015	0.009(1)	
c-C ₃ HD	3 _{0,3} -2 _{1,2}	104187.126	5.30(2)	0.41(2)	0.649	0.283(28)	
CH ₂ DCN	6 _{0,6} -5 _{0,5}	104198.143	5.30(2)	0.45(4)	0.011	0.0054(5)	
H ₂ CS	3 _{1,2} -2 _{1,1}	104617.040			0.611	0.371(37)	1
NCO	² Π _{3/2} J=9/2-7/2 F=11/2-9/2 e	104665.278	5.50(6)	0.61(11)	0.006	0.004(1)	
NCO	² Π _{3/2} J=9/2-7/2 F=11/2-9/2 f	104666.098	5.36(2)	0.60(10)	0.008	0.005(1)	
C ₄ H	N=11-10 J=23/2-21/2	104666.568	5.34(2)	0.52(2)	0.199	0.110(10)	
NCO	² Π _{3/2} J=9/2-7/2 F=9/2-7/2 e	104670.139	5.32(2)	0.71(17)	0.006	0.005(1)	
NCO	² Π _{3/2} J=9/2-7/2 F=9/2-7/2 f	104670.905	5.35(3)	0.38(9)	0.009	0.004(1)	
C ₄ H	N=11-10 J=21/2-19/2	104705.108	5.29(13)	0.54(13)	0.174	0.100(9)	
¹³ C ¹⁸ O	1-0	104711.404	5.49(13)	0.86(13)	0.092	0.085(8)	
c-C ₃ HD	3 _{1,3} -2 _{1,2}	104799.707	5.30(2)	0.40(2)	0.172	0.073(7)	
HOCN	5 _{0,5} -4 _{0,4}	104874.678	5.30(33)	0.43(2)	0.076	0.035(3)	
l-C ₃ H ₂	5 _{1,4} -4 _{1,3}	104915.583	5.28(2)	0.42(2)	0.116	0.052(5)	
c-H ¹³ CCCD	3 _{1,3} -2 _{0,2}	105459.577	5.32(2)	0.31(8)	0.008	0.003(1)	
c-C ₃ H ₂ O	8 _{1,8} -7 _{1,7}	105476.475	5.29(2)	0.39(3)	0.023	0.009(1)	
HNCS	9 _{0,9} -8 _{0,8}	105558.074	5.28(6)	0.54(17)	0.006	0.003(1)	5
H ¹³ CCCN	12-11	105799.113	5.43(13)	0.60(13)	0.031	0.020(1)	
C ₃ O	11-10	105835.363	5.30(21)	0.45(2)	0.040	0.019(1)	
c-HCC ¹³ CD	3 _{1,3} -2 _{0,2}	106212.420	5.15(2)	0.31(3)	0.017	0.005(1)	
c-C ₃ HD	4 _{2,3} -4 _{1,4}	106256.108	5.29(2)	0.41(3)	0.028	0.012(1)	
C ₂ S	8 ₉ -7 ₈	106347.726			0.388	0.244(24)	1
HC ₃ N	40-39	106498.910	5.42(4)	0.83(8)	0.017	0.015(1)	
H ₂ C ₄	12 _{1,12} -11 _{1,11}	106726.849	5.28(5)	0.64(7)	0.015	0.010(1)	
³⁴ SO	3 ₂ -2 ₁	106743.244	4.92(7)	0.48(5)	0.015	0.008(1)	
c-C ₃ HD	3 _{0,3} -2 _{0,2}	106811.090	5.30(2)	0.39(2)	0.192	0.080(7)	
HCO ₂ ⁺	5 _{0,5} -4 _{0,4}	106913.545	5.29(2)	0.43(2)	0.091	0.042(4)	
CH ₃ OH	3 ₁ -4 ₀ A+	107013.831	5.28(2)	0.50(3)	-0.051	-0.027(2)	
H ₂ C ₄	12 _{0,12} -11 _{0,11}	107175.007	5.16(3)	0.57(10)	0.011	0.007(1)	

Table A.1. continued.

Molecule	Transition	Frequency (MHz)	V_{LSR} (km s ⁻¹)	Δv (km s ⁻¹)	T_A^* peak (K)	$\int T_A^* dv$ (K km s ⁻¹)	Notes
¹³ C ¹⁷ O	1-0 $F=3/2-5/2$	107288.423					3
¹³ C ¹⁷ O	1-0 $F=7/2-5/2$	107288.642	5.40(7)	1.29(12)	0.014	0.019(2)	3
¹³ C ¹⁷ O	1-0 $F=5/2-5/2$	107289.669	5.54(7)	0.85(18)	0.010	0.009(1)	
<i>c</i> -C ₃ HD	3 _{1,3} -2 _{0,2}	107423.671	5.30(2)	0.40(2)	0.664	0.284(28)	
HCCCHO	5 _{1,5} -4 _{0,4}	107556.610	5.39(6)	0.84(18)	0.009	0.008(1)	
H ₂ C ₄	12 _{1,11} -11 _{1,10}	107622.954	5.29(2)	0.61(8)	0.014	0.009(1)	
<i>c</i> -C ₃ H ₂ O	8 _{0,8} -7 _{0,7}	107805.015	5.21(4)	0.50(8)	0.010	0.006(1)	
¹³ CN	$N=1-0 J=1/2-1/2 F_1=1-1 F=1-2$	108076.969	4.74(4)	0.38(11)	0.009	0.004(1)	
¹³ CN	$N=1-0 J=1/2-1/2 F_1=1-1 F=2-2$	108091.335	4.60(3)	0.38(7)	0.013	0.005(1)	
<i>trans</i> -HCOOH	5 _{1,5} -4 _{1,4}	108126.720	5.31(2)	0.52(7)	0.018	0.010(1)	
¹³ CN	$N=1-0 J=1/2-1/2 F_1=0-1 F=1-0$	108406.091	5.13(5)	0.45(9)	0.010	0.005(1)	2
¹³ CN	$N=1-0 J=1/2-1/2 F_1=0-1 F=1-1$	108412.862	5.18(2)	0.55(3)	0.036	0.021(2)	2
¹³ CN	$N=1-0 J=1/2-1/2 F_1=0-1 F=1-2$	108426.889	5.20(2)	0.55(3)	0.071	0.041(4)	
¹³ CN	$N=1-0 J=1/2-1/2 F_1=1-0 F=0-1$	108631.121	5.25(6)	0.31(11)	0.038	0.012(4)	2
¹³ CN	$N=1-0 J=1/2-1/2 F_1=1-0 F=1-1$	108636.923	5.31(2)	0.44(5)	0.106	0.050(5)	2
¹³ CN	$N=1-0 J=3/2-1/2 F_1=1-1 F=1-0$	108638.212	5.40(2)	0.30(9)	0.042	0.013(4)	2
¹³ CN	$N=1-0 J=3/2-1/2 F_1=1-1 F=2-1$	108643.590	5.27(3)	0.52(12)	0.057	0.031(6)	2
¹³ CN	$N=1-0 J=3/2-1/2 F_1=1-1 F=0-1$	108644.346	5.25(7)	0.32(13)	0.030	0.010(4)	2
¹³ CN	$N=1-0 J=3/2-1/2 F_1=1-1 F=1-1$	108645.064	5.67(13)	0.52(24)	0.031	0.017(6)	
¹³ CN	$N=1-0 J=1/2-1/2 F_1=1-0 F=2-1$	108651.297	5.32(2)	0.47(3)	0.165	0.082(8)	2
<i>c</i> -C ₃ D ₂	2 _{2,1} -1 _{1,0}	108654.564	5.34(7)	0.41(17)	0.042	0.018(6)	
¹³ CN	$N=1-0 J=3/2-1/2 F_1=1-1 F=2-2$	108657.646	5.34(2)	0.53(6)	0.131	0.074(7)	
¹³ CN	$N=1-0 J=3/2-1/2 F_1=1-1 F=1-2$	108658.948	5.24(7)	0.48(16)	0.046	0.023(7)	
HC ¹³ CCN	12-11	108710.532	5.39(2)	0.52(5)	0.025	0.014(1)	
HCC ¹³ CN	12-11	108720.999	5.29(2)	0.60(4)	0.032	0.020(2)	
¹³ CN	$N=1-0 J=3/2-1/2 F_1=2-1 F=3-2$	108780.201	5.33(13)	0.55(13)	0.210	0.122(12)	2
¹³ CN	$N=1-0 J=3/2-1/2 F_1=2-1 F=2-1$	108782.374	5.31(13)	0.52(13)	0.128	0.071(7)	
¹³ CN	$N=1-0 J=3/2-1/2 F_1=2-1 F=1-0$	108786.982	5.28(13)	0.48(13)	0.070	0.036(3)	2
¹³ CN	$N=1-0 J=3/2-1/2 F_1=2-1 F=1-1$	108793.753	5.30(10)	0.54(8)	0.052	0.030(4)	2
¹³ CN	$N=1-0 J=3/2-1/2 F_1=2-1 F=2-2$	108796.400	5.28(2)	0.46(7)	0.059	0.029(4)	
C ₃ N	$N=11-10 J=23/2-21/2$	108834.254	5.08(3)	0.95(10)	0.015	0.016(1)	
C ₃ N	$N=11-10 J=21/2-19/2$	108853.012	5.31(3)	0.54(8)	0.015	0.008(1)	
CH ₃ OH	1 ₋₁ -0 ₀ <i>E</i>	108893.945			0.319	0.247(24)	1
CH ₃ CCD	7 ₁ -6 ₁	109029.216	5.26(2)	0.40(4)	0.048	0.021(2)	
CH ₃ CCD	7 ₀ -6 ₀	109031.214	5.26(2)	0.40(3)	0.057	0.025(2)	
HC ₃ N	41-40	109160.973	5.36(3)	0.99(9)	0.013	0.014(1)	
HC ₃ N	12-11	109173.634			1.770	1.381(138)	1
¹³ CN	$N=1-0 J=3/2-1/2 F_1=1-0 F=2-1$	109217.567	5.90(4)	0.58(9)	0.012	0.007(1)	
¹³ CN	$N=1-0 J=3/2-1/2 F_1=1-0 F=1-1$	109218.919	5.89(3)	0.50(7)	0.012	0.006(1)	
SO	3 ₂ -2 ₁	109252.220			0.445	0.226(22)	1
HCCNC	11-10	109289.095	5.28(3)	0.44(3)	0.032	0.015(1)	
OCS	9-8	109463.063	5.31(2)	0.43(2)	0.072	0.033(3)	
C ¹⁵ N	$N=1-0 J=1/2-1/2 F=1-1$	109689.610	5.18(2)	0.56(5)	0.028	0.017(1)	
C ¹⁵ N	$N=1-0 J=1/2-1/2 F=1-0$	109708.986	5.08(2)	0.55(6)	0.014	0.008(1)	
C ¹⁵ N	$N=1-0 J=1/2-1/2 F=0-1$	109733.657	5.03(2)	0.36(4)	0.018	0.007(1)	
DC ₃ N	13-12	109757.143	5.34(8)	0.41(2)	0.057	0.025(2)	
C ¹⁸ O	1-0	109782.173			3.600	3.310(330)	1
C ₃ S	19-18	109828.290	5.34(3)	0.61(11)	0.014	0.009(1)	
HNCO	5 _{0,5} -4 _{0,4} $F=4-4$	109904.890	5.33(40)	0.36(18)	0.030	0.012(5)	
HNCO	5 _{0,5} -4 _{0,4} $F=6-5 + F=5-4 + F=4-3$	109905.753	5.32(2)	0.40(2)	1.313	0.555(55)	
HNCO	5 _{0,5} -4 _{0,4} $F=5-5$	109906.445	5.31(40)	0.41(20)	0.026	0.011(5)	
HN ¹³ CO	5 _{0,5} -4 _{0,4}	109908.950	5.52(40)	0.41(20)	0.033	0.014(7)	
C ¹⁵ N	$N=1-0 J=3/2-1/2 F=1-1$	110004.092	5.15(4)	0.57(9)	0.011	0.007(1)	
C ¹⁵ N	$N=1-0 J=3/2-1/2 F=1-0$	110023.540	5.19(2)	0.42(3)	0.034	0.015(1)	
C ¹⁵ N	$N=1-0 J=3/2-1/2 F=2-1$	110024.590	5.24(2)	0.48(2)	0.070	0.036(3)	
NH ₂ D	1 _{1,1} -1 _{0,1} para $F=0-1$	110152.092	5.43(13)	0.38(13)	0.223	0.091(12)	
NH ₂ D	1 _{1,1} -1 _{0,1} para $F=2-1$	110153.021	5.39(13)	0.41(13)	0.279	0.121(12)	
NH ₂ D	1 _{1,1} -1 _{0,1} para $F=2-2 + F=1-1$	110153.594	5.41(13)	0.51(13)	0.602	0.326(32)	
NH ₂ D	1 _{1,1} -1 _{0,1} para $F=1-2$	110154.173	5.36(13)	0.42(13)	0.261	0.116(12)	
NH ₂ D	1 _{1,1} -1 _{0,1} para $F=1-0$	110155.028	5.32(13)	0.47(13)	0.208	0.104(12)	
¹³ CO	1-0	110201.354			5.684	9.474(947)	1
<i>c</i> -HCC ¹³ CH	2 _{1,1} -1 _{1,0}	110306.313	5.25(3)	0.42(7)	0.014	0.006(1)	
CH ₃ CN	6 ₁ -5 ₁	110381.372	5.34(2)	0.76(7)	0.057	0.046(4)	
CH ₃ CN	6 ₀ -5 ₀	110383.500	5.32(2)	0.65(4)	0.072	0.050(4)	
D ₂ CS	4 _{1,4} -3 _{1,3}	110756.126	5.34(2)	0.38(7)	0.015	0.006(1)	

Table A.1. continued.

Molecule	Transition	Frequency (MHz)	V_{LSR} (km s ⁻¹)	Δv (km s ⁻¹)	T_A^* peak (K)	$\int T_A^* dv$ (K km s ⁻¹)	Notes
D ₂ CO	2 _{1,2} -1 _{1,1}	110837.830	5.39(2)	0.41(2)	0.124	0.054(5)	
<i>trans</i> -HCOOH	5 _{0,5} -4 _{0,4}	111746.785	5.30(2)	0.36(8)	0.022	0.008(1)	
CH ₃ CHO	6 _{1,6} -5 _{1,5} A	112248.716	5.37(3)	0.60(8)	0.027	0.017(2)	
CH ₃ CHO	6 _{1,6} -5 _{1,5} E	112254.508	5.20(4)	0.86(11)	0.025	0.023(2)	
C ¹⁷ O	1-0 F=3/2-5/2	112358.777					1, 3
C ¹⁷ O	1-0 F=7/2-5/2	112358.982			0.754	0.798(79)	1, 3
C ¹⁷ O	1-0 F=5/2-5/2	112360.007			0.485	0.407(40)	1
CH ₂ DCCH	7 _{1,7} -6 _{1,6}	112805.469	5.26(2)	0.35(2)	0.094	0.035(3)	
HDCCO	6 _{0,6} -5 _{0,5}	112895.981	5.28(3)	0.35(6)	0.015	0.0055(9)	
N ³⁴ S	² Π _{1/2} J=5/2-3/2 F=7/2-5/2 e	113104.650	5.28(4)	0.38(10)	0.015	0.0061(9)	
CN	N=1-0 J=1/2-1/2 F=1/2-1/2	113123.370			1.063	0.659(65)	1
CN	N=1-0 J=1/2-1/2 F=1/2-3/2	113144.157			0.809	0.990(99)	1
CN	N=1-0 J=1/2-1/2 F=3/2-1/2	113170.492			0.836	1.024(102)	1
CN	N=1-0 J=1/2-1/2 F=3/2-3/2	113191.279			0.757	1.063(106)	1
CH ₂ DCCH	7 _{2,6} -6 _{2,5}	113256.174	5.24(13)	0.34(12)	0.014	0.005(2)	
CH ₂ DCCH	7 _{0,7} -6 _{0,6}	113258.171	5.27(13)	0.31(12)	0.185	0.060(6)	
CH ₂ DCCH	7 _{2,5} -6 _{2,4}	113262.423	5.26(13)	0.33(12)	0.023	0.008(2)	
C ₂ S	9 ₈ -8 ₇	113410.186	5.29(2)	0.53(2)	0.094	0.053(5)	
D ₂ CS	4 _{0,4} -3 _{0,3}	113484.714	5.37(2)	0.29(2)	0.078	0.024(2)	1
CN	N=1-0 J=3/2-1/2 F=3/2-1/2	113488.120			0.760	1.001(100)	1
CN	N=1-0 J=3/2-1/2 F=5/2-3/2	113490.970			0.921	1.665(166)	1, 2
CN	N=1-0 J=3/2-1/2 F=1/2-1/2	113499.644			0.718	0.890(89)	1, 2
CN	N=1-0 J=3/2-1/2 F=3/2-3/2	113508.907			0.945	1.070(107)	1
N ³⁴ S	² Π _{1/2} J=5/2-3/2 F=5/2-3/2 f	113514.550	5.48(39)	0.53(26)	0.018	0.010(5)	
CN	N=1-0 J=3/2-1/2 F=1/2-3/2	113520.432	5.38(2)	0.50(2)	1.062	0.566(56)	
CH ₂ DCCH	7 _{1,6} -6 _{1,5}	113716.762	5.25(2)	0.31(2)	0.092	0.031(3)	
C ₄ H	N=12-11 J=25/2-23/2	114182.515	5.35(2)	0.52(3)	0.116	0.064(6)	
C ₄ H	N=12-11 J=23/2-21/2	114221.041	5.30(2)	0.54(3)	0.111	0.064(6)	
<i>c</i> -HC ¹³ CCH	3 _{0,3} -2 _{1,2}	114381.212	5.20(2)	0.38(4)	0.049	0.020(1)	
<i>c</i> -C ₃ HD	3 _{1,2} -2 _{2,1}	114647.951	5.30(2)	0.49(2)	0.153	0.081(8)	
HCNO	5-4	114688.382	5.34(2)	0.29(6)	0.030	0.009(1)	
<i>c</i> -HCC ¹³ CH	3 _{0,3} -2 _{1,2}	114897.371	5.24(2)	0.37(2)	0.249	0.098(9)	
CH ₃ CHO	6 _{0,6} -5 _{0,5} E	114940.175	5.29(2)	0.54(10)	0.044	0.025(2)	
CH ₃ CHO	6 _{0,6} -5 _{0,5} A	114959.902	5.38(4)	0.60(7)	0.037	0.024(2)	
NS	² Π _{1/2} J=5/2-3/2 F=7/2-5/2 e	115153.935	5.50(13)	0.42(12)	0.340	0.154(15)	
NS	² Π _{1/2} J=5/2-3/2 F=5/2-3/2 e	115156.812	5.51(13)	0.40(12)	0.250	0.107(10)	
NS	² Π _{1/2} J=5/2-3/2 F=3/2-1/2 e	115162.982	5.57(13)	0.43(12)	0.148	0.068(6)	
NS	² Π _{1/2} J=5/2-3/2 F=3/2-3/2 e	115185.411	5.49(3)	0.42(6)	0.039	0.017(2)	
NS	² Π _{1/2} J=5/2-3/2 F=5/2-5/2 e	115191.288	5.44(5)	0.77(15)	0.031	0.025(3)	
CO	1-0	115271.202			10.006	44.80(447)	1
C ₃ O	12-11	115455.899	5.31(2)	0.33(5)	0.048	0.017(2)	
NS	² Π _{1/2} J=5/2-3/2 F=5/2-5/2 f	115489.412	5.15(2)	0.24(3)	0.062	0.016(2)	
<i>c</i> -HCC ¹³ CH	3 _{1,3} -2 _{0,2}	115524.356	5.25(12)	0.37(2)	0.266	0.103(10)	
NS	² Π _{1/2} J=5/2-3/2 F=3/2-3/2 f	115524.603	5.11(2)	0.38(6)	0.064	0.026(2)	
NS	² Π _{1/2} J=5/2-3/2 F=3/2-5/2 f	115556.253	5.07(2)	0.38(2)	0.346	0.140(13)	
NS	² Π _{1/2} J=5/2-3/2 F=5/2-3/2 f	115570.763	5.12(2)	0.36(3)	0.240	0.091(9)	
NS	² Π _{1/2} J=5/2-3/2 F=3/2-1/2 f	115571.954	5.12(3)	0.36(5)	0.146	0.056(7)	
SO ⁺	² Π _{1/2} J=5/2-3/2 e	115804.405	5.36(2)	0.52(4)	0.115	0.063(6)	

Notes:

- (1) Complex line profile. Impossible to fit to Gaussian function.
- (2) Line affected by frequency switching negative artifact of other line.
- (3) Line blended. Only one component could be fitted.
- (4) Line blended. Several components could be fitted.
- (5) Marginal detection.
- (6) Hyperfine components resolved in astronomical spectrum but not in the laboratory.

Table A.2. Line parameters of unidentified lines in L483

Label	Frequency (MHz)	$\Delta\nu$ (km s ⁻¹)	T_A^* peak (K)	$\int T_A^* d\nu$ (K km s ⁻¹)	Comment
U82619	82618.59(2)	0.33(8)	0.010	0.004(1)	
U82667	82666.72(2)	0.47(7)	0.014	0.007(1)	
U87998	87998.01(2)	0.58(9)	0.009	0.006(1)	
U88306	88306.51(2)	0.43(9)	0.012	0.005(1)	
U91341	91340.84(2)	0.50(13)	0.006	0.003(1)	U91341, U91343, and U91344 are probably hyperfine components of the
U91343	91342.70(2)	0.53(5)	0.016	0.009(1)	same rotational transition.
U91344	91344.01(2)	0.66(10)	0.009	0.006(1)	Seen in B1-b at 91344.0 MHz (Lefloch et al. 2018).
U92373	92372.79(2)	0.27(2)	0.031	0.009(1)	Nearby U line seen in L1448-R2 at 92374.0 MHz (Lefloch et al. 2018).
U92780	92779.67(2)	0.31(7)	0.017	0.005(1)	
U103023	103023.22(2)	0.39(7)	0.010	0.004(1)	
U103402	103402.20(2)	0.40(3)	0.022	0.009(1)	Seen in Sgr B2(N) at 103402 MHz (Halfen et al. 2006).
U104713	104712.84(3)	0.48(10)	0.015	0.008(1)	
U107298	107298.39(2)	0.32(6)	0.012	0.004(1)	
U107765	107765.04(2)	0.33(4)	0.028	0.010(1)	
U108241	108241.47(2)	0.51(9)	0.016	0.008(1)	
U109610	109610.17(3)	0.74(16)	0.013	0.010(1)	
U112622	112621.87(3)	0.53(8)	0.011	0.006(1)	
U114380	114379.97(3)	0.48(16)	0.025	0.013(3)	

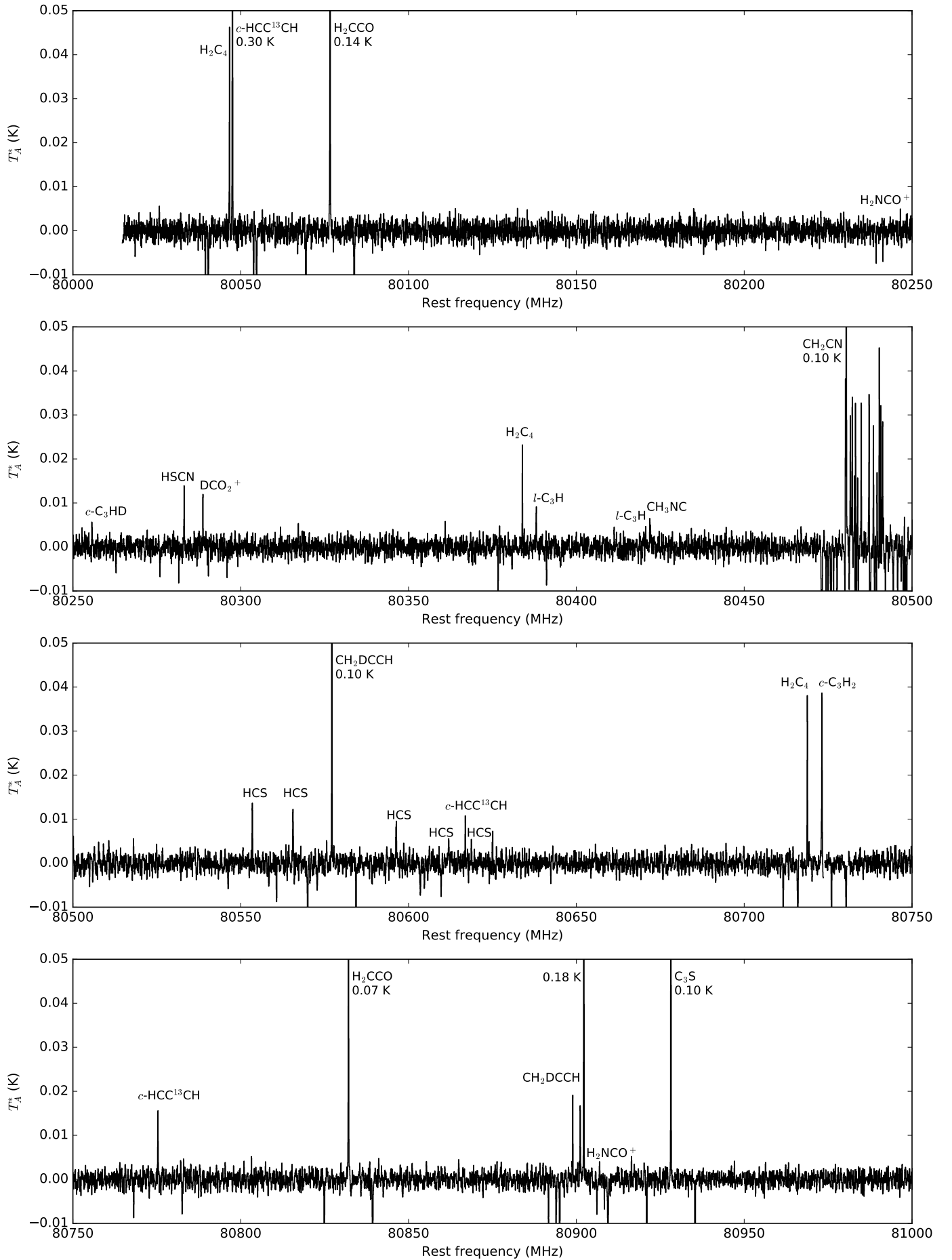


Fig. A.1. The 80-116 GHz spectrum of L483.

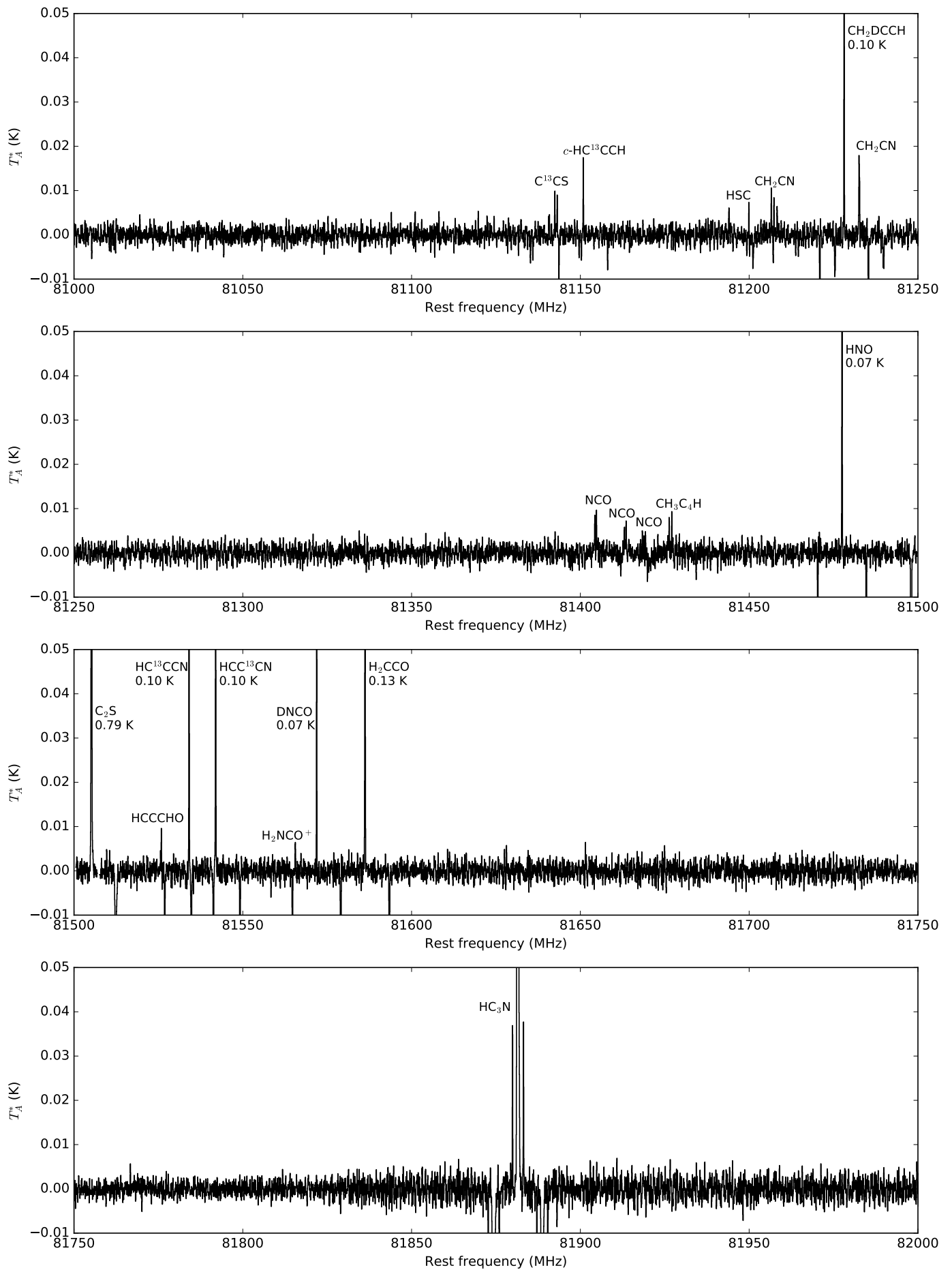


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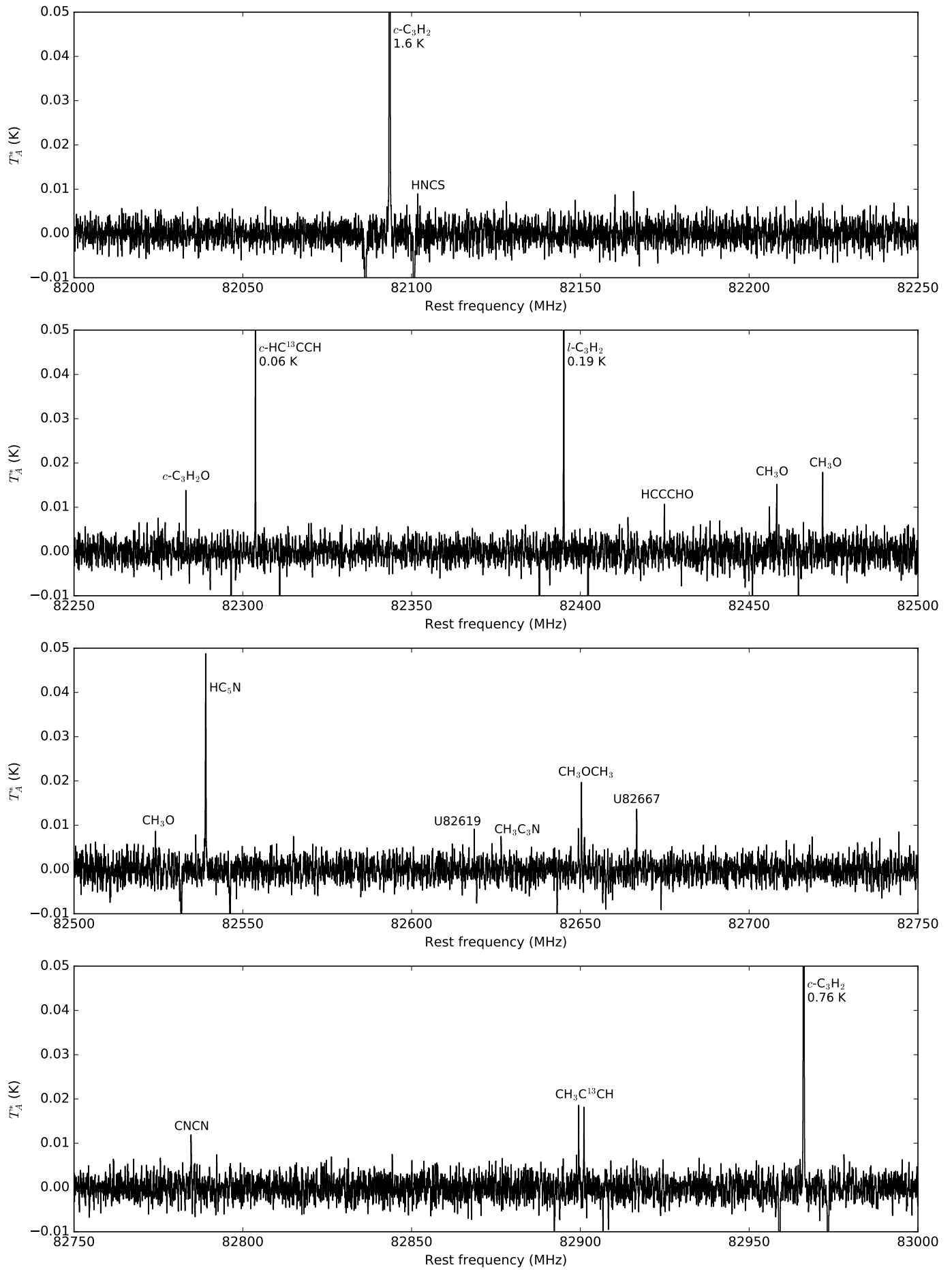


Fig. A.1. Continued

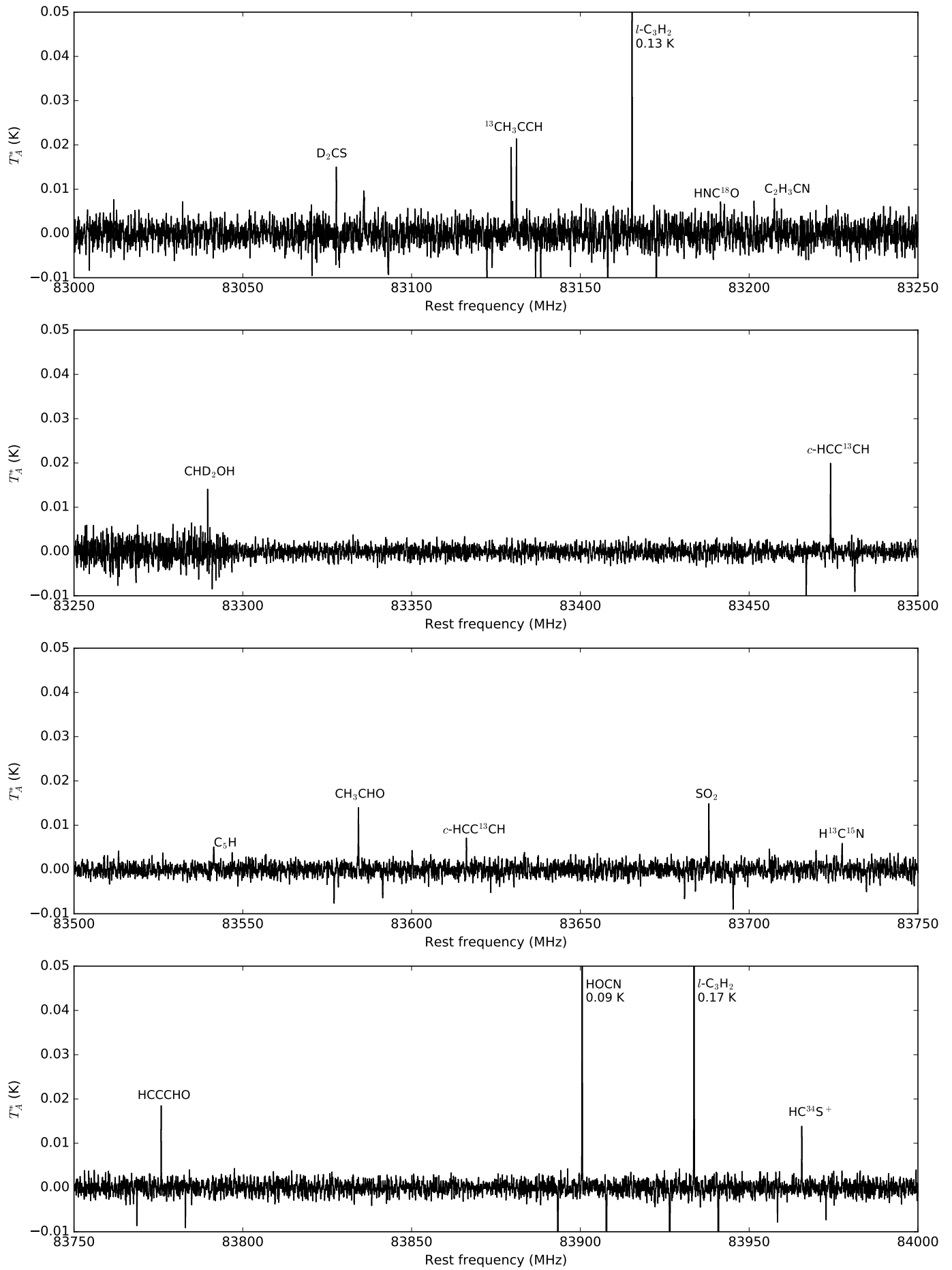


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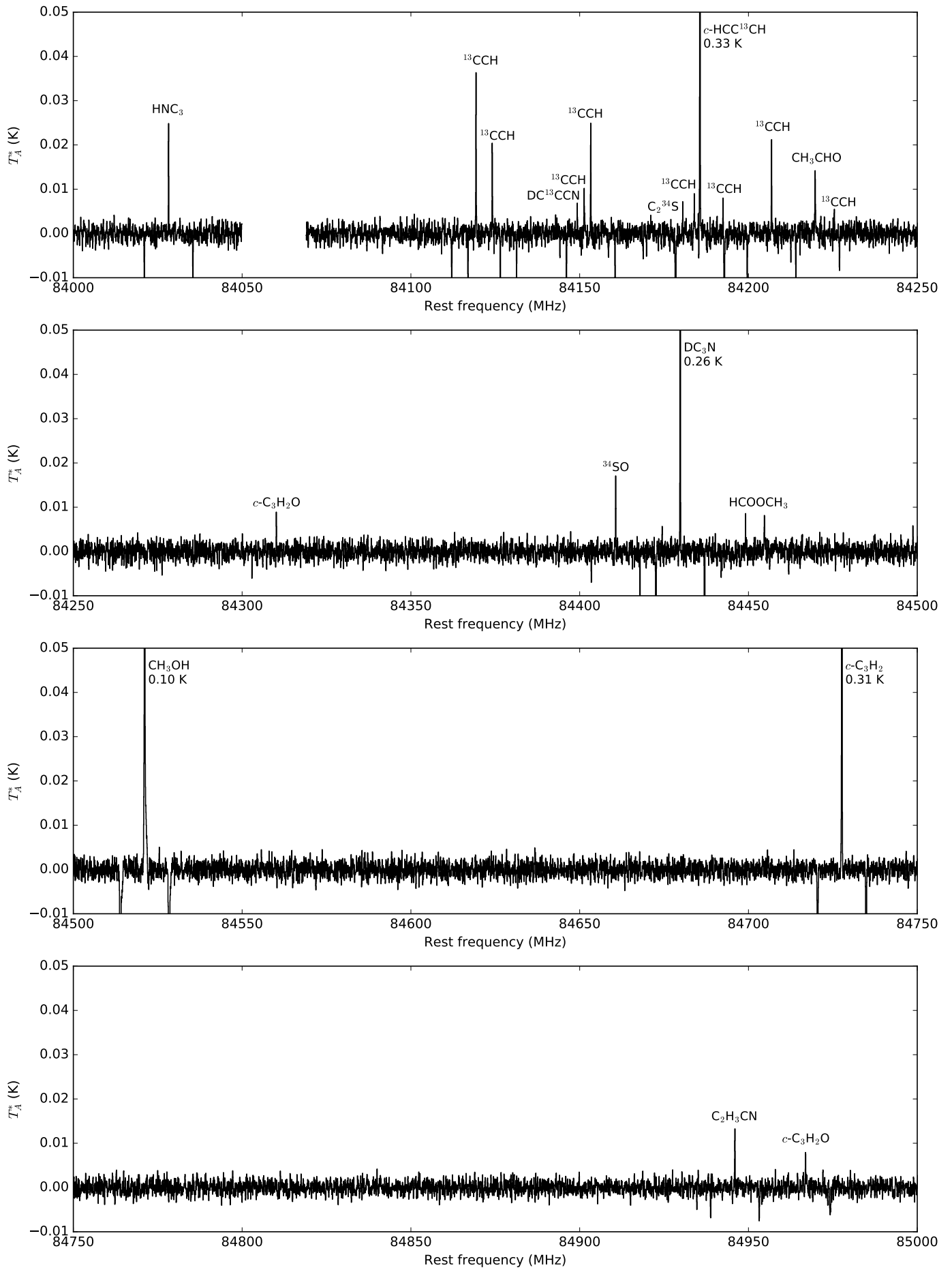


Fig. A.1. Continued

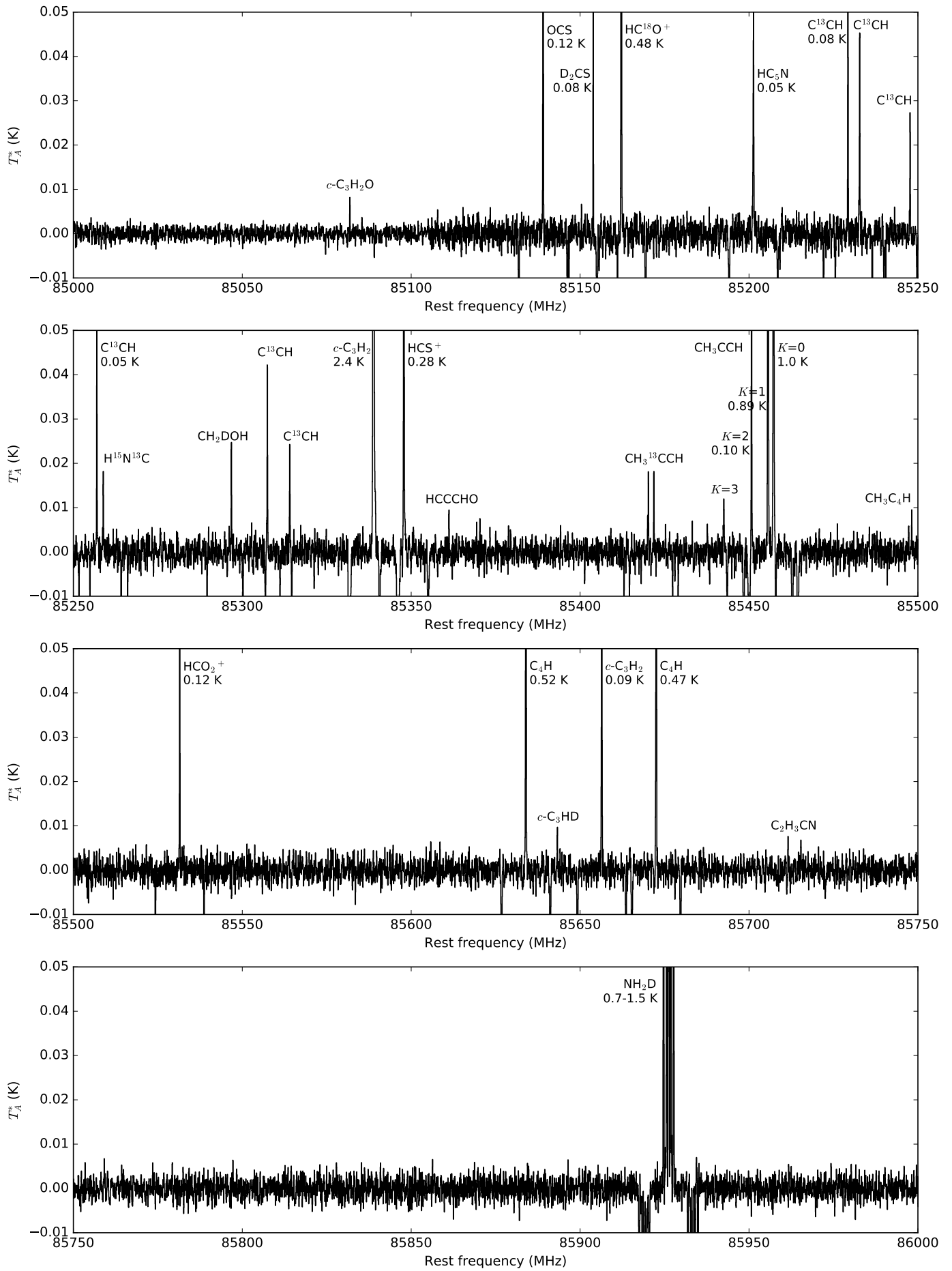


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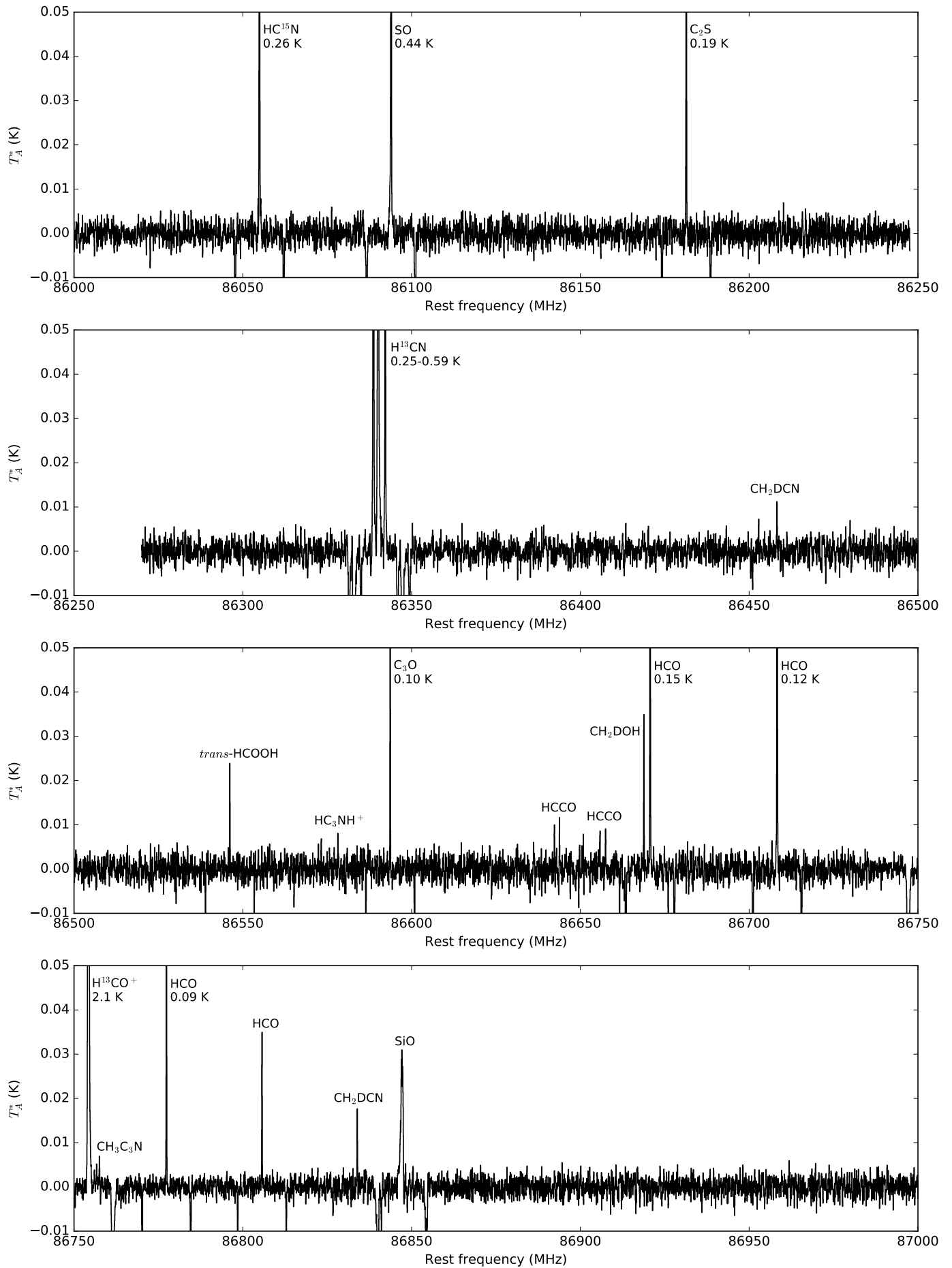


Fig. A.1. Continued

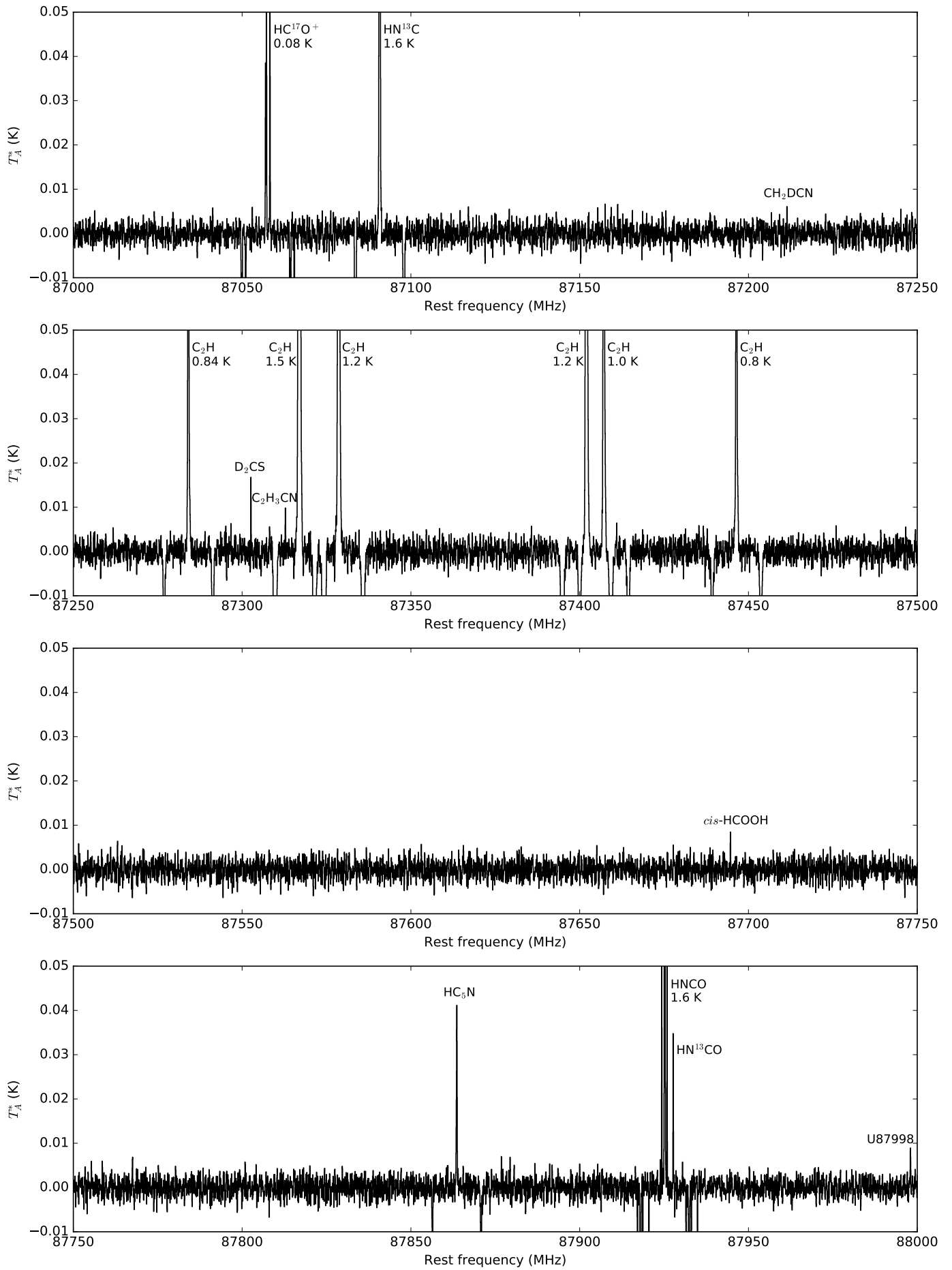


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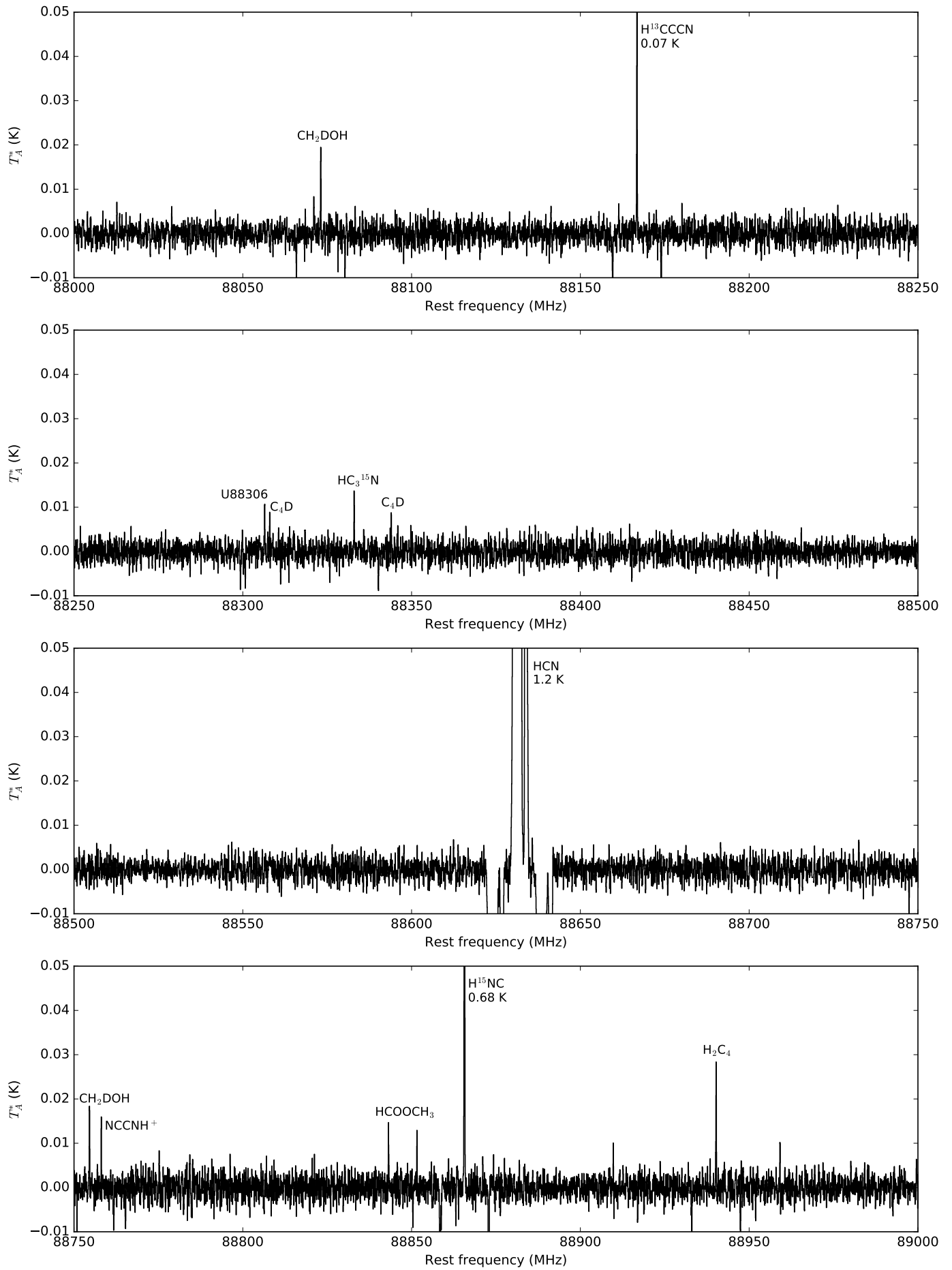


Fig. A.1. Continued

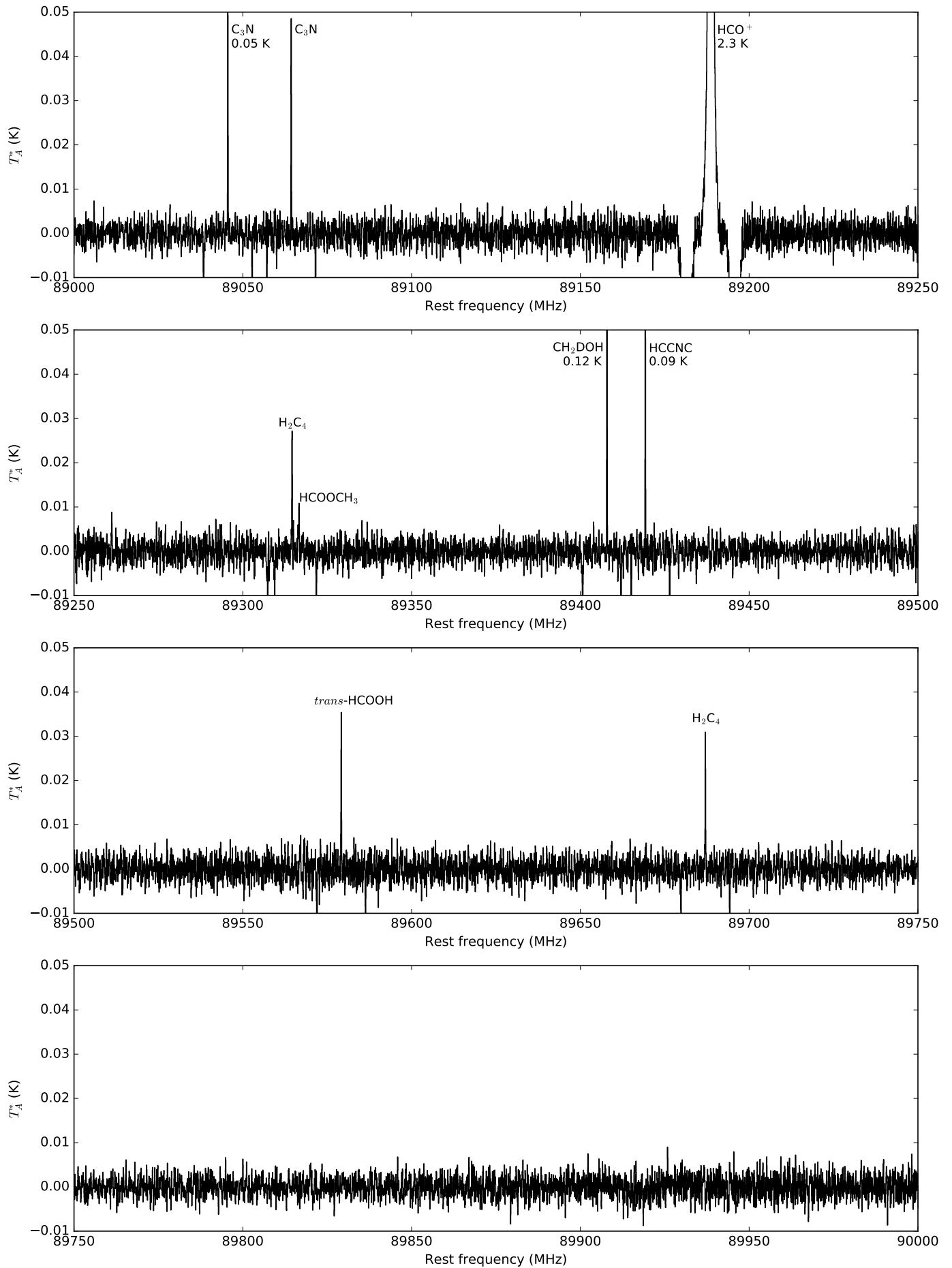


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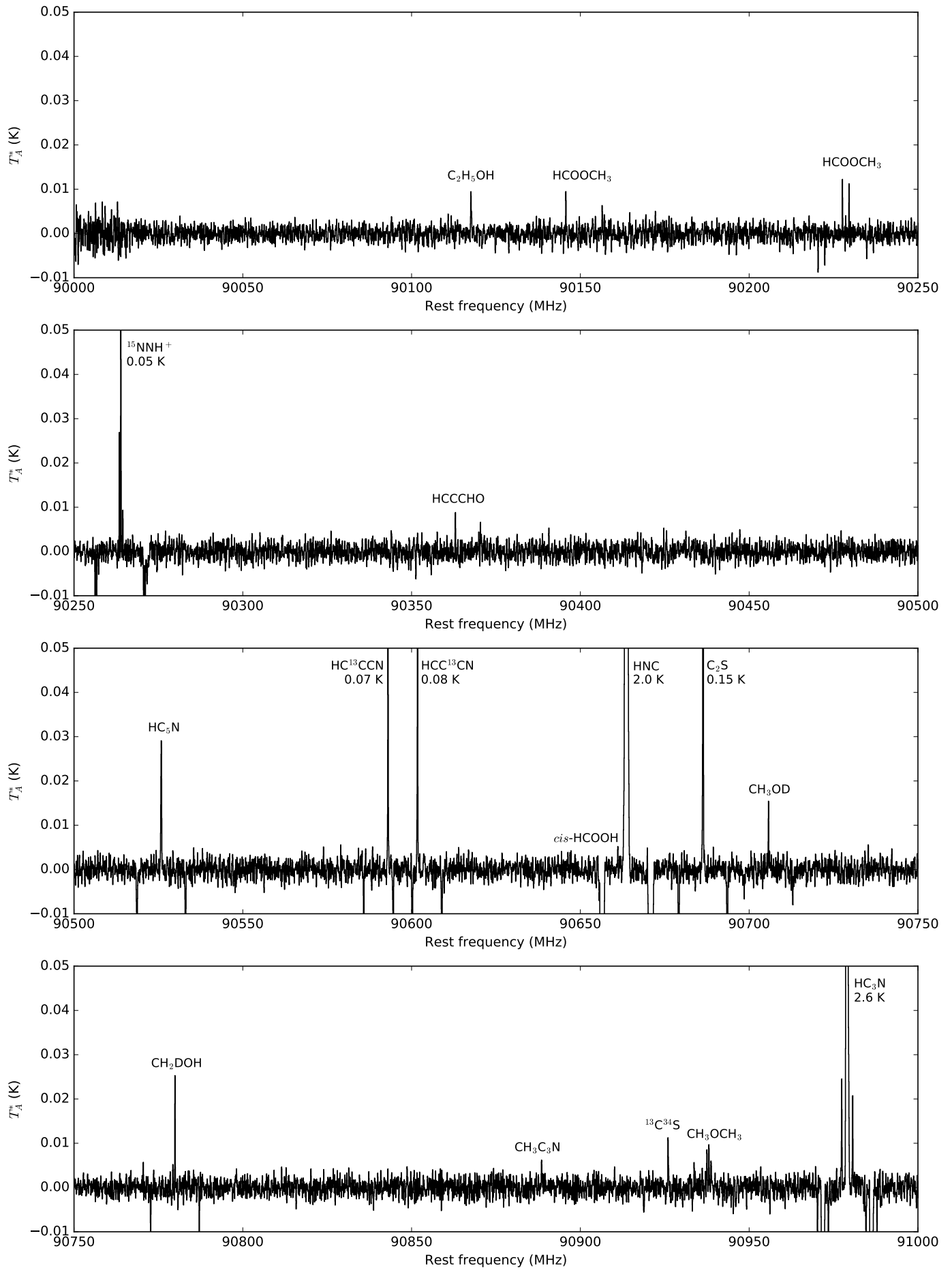


Fig. A.1. Continued

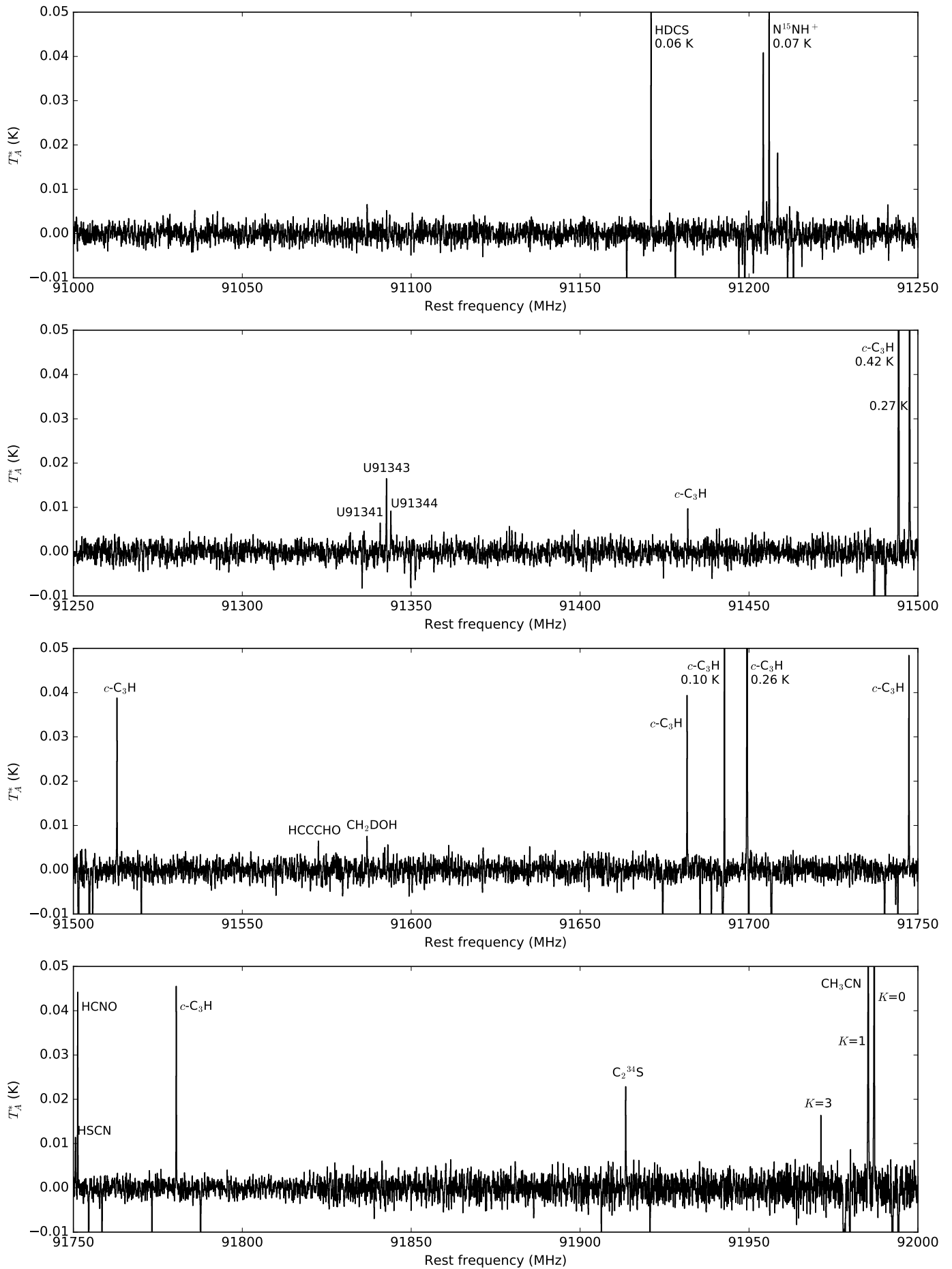


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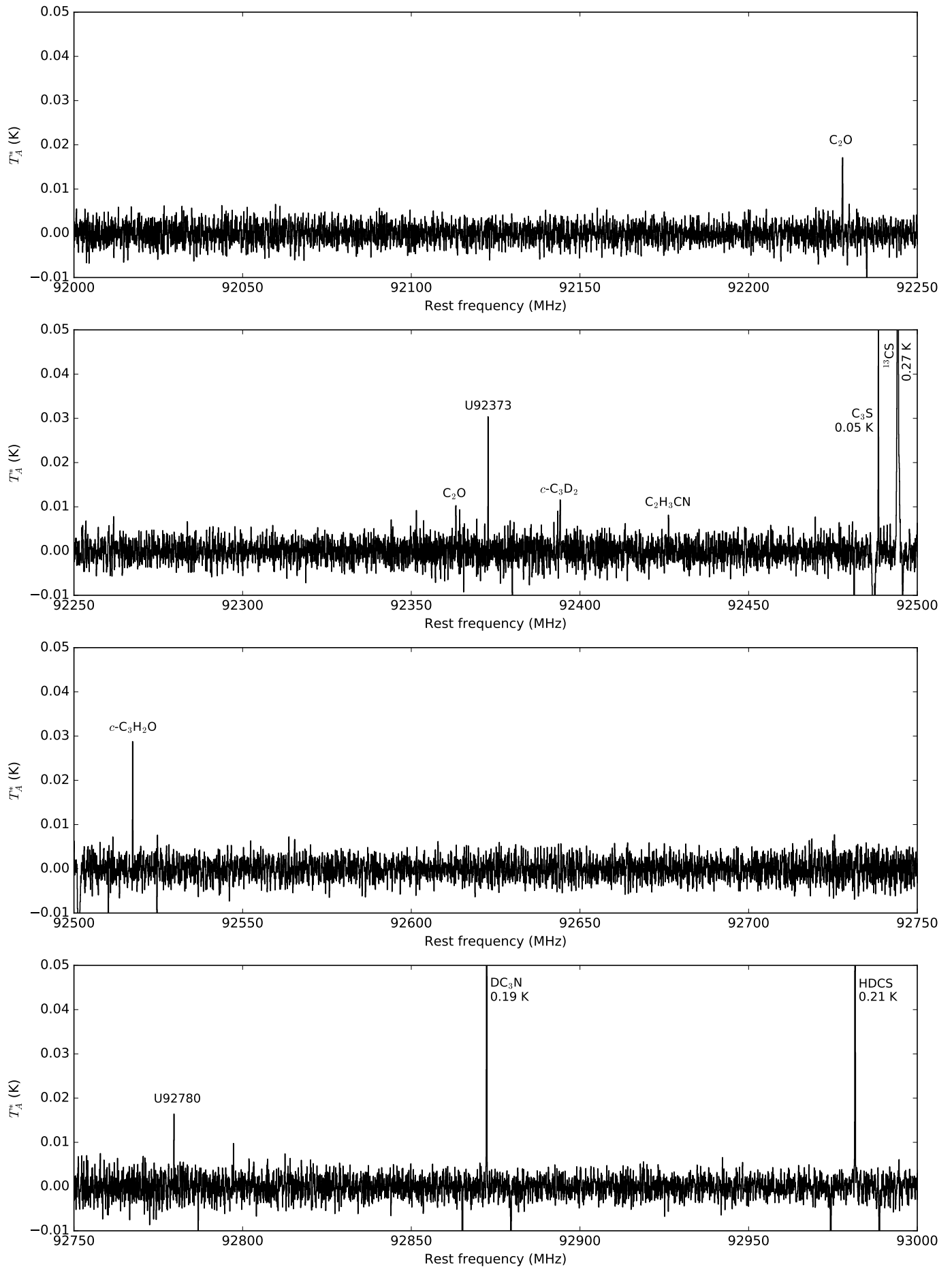


Fig. A.1. Continued

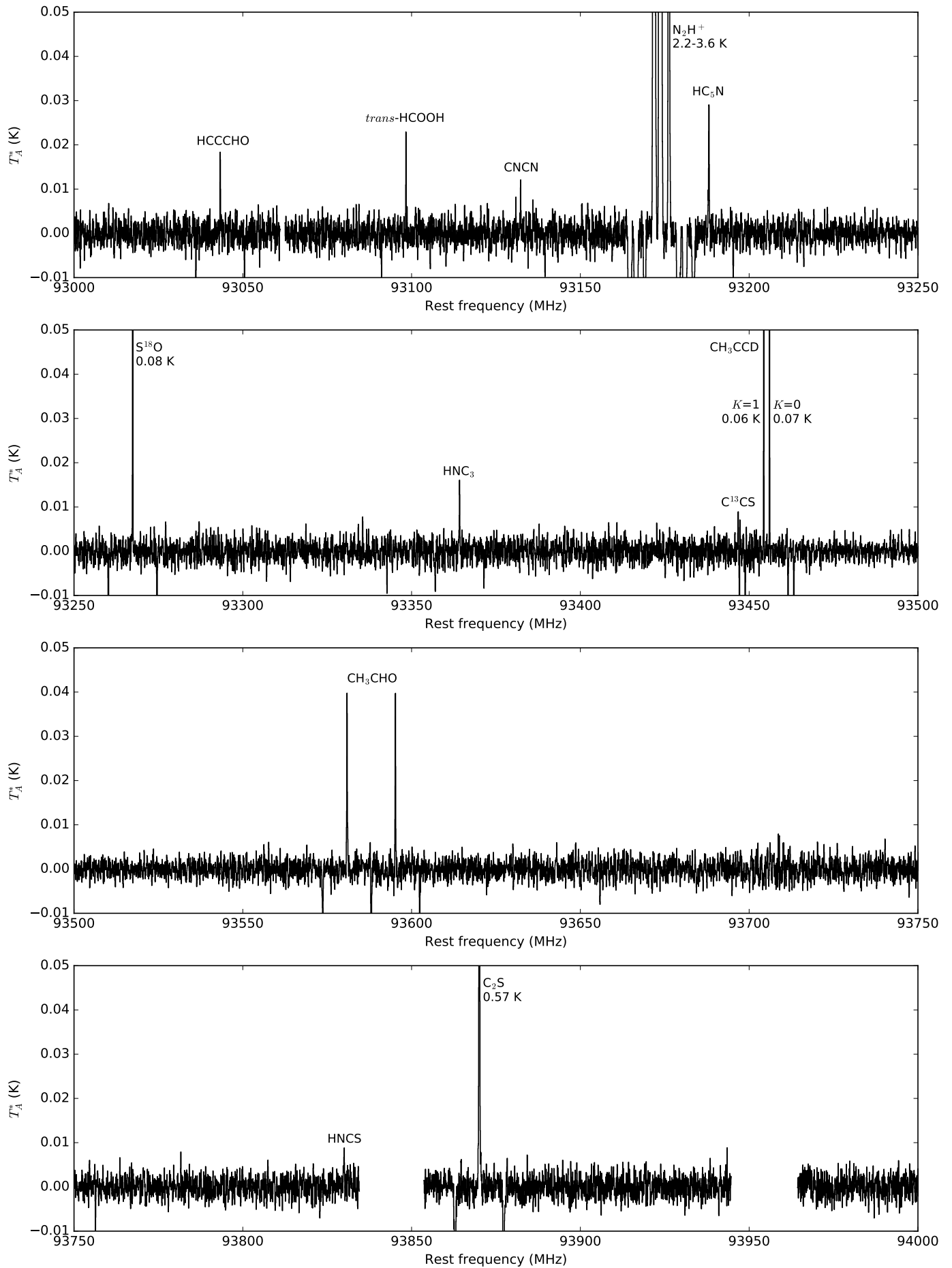


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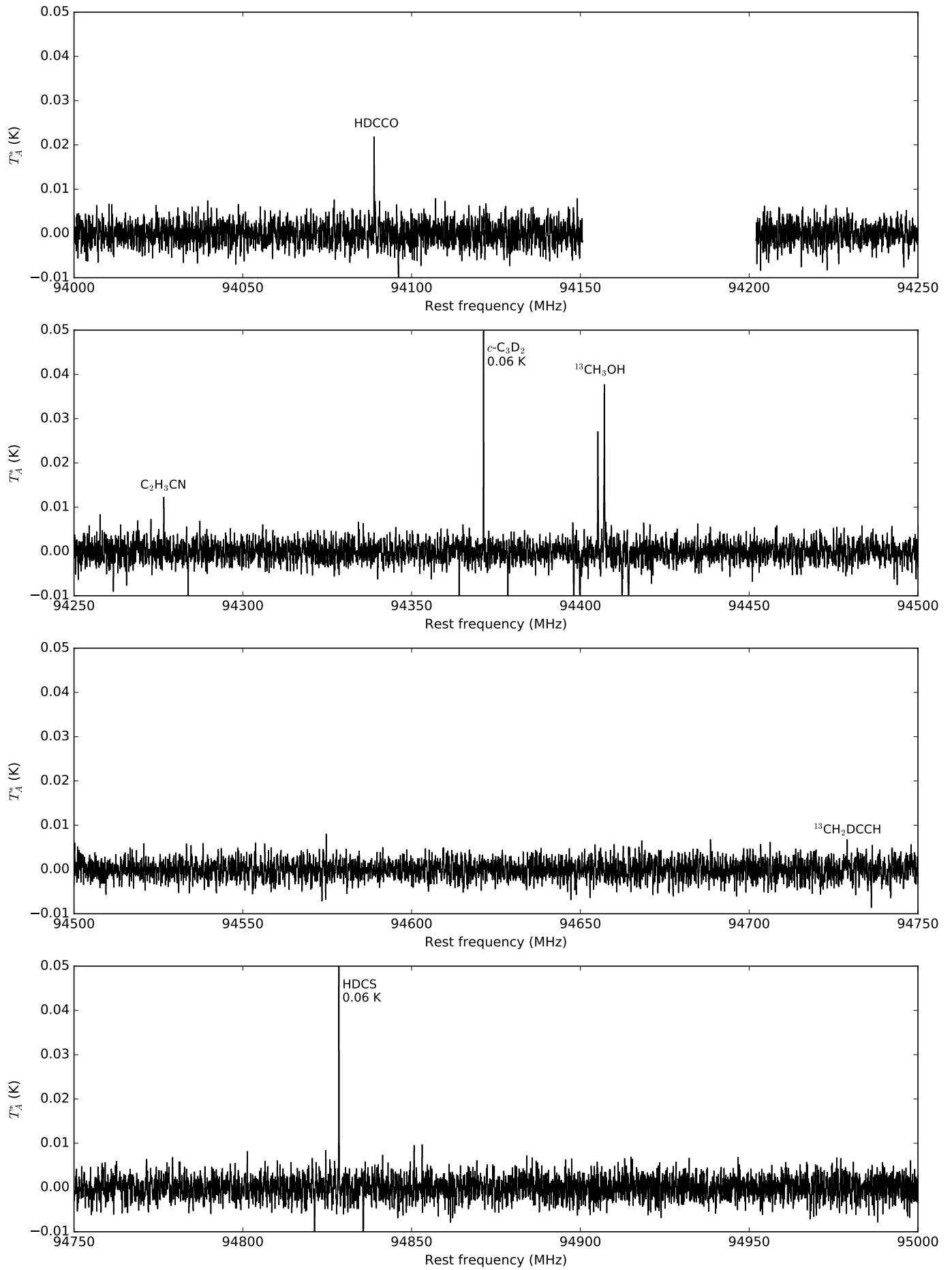


Fig. A.1. Continued

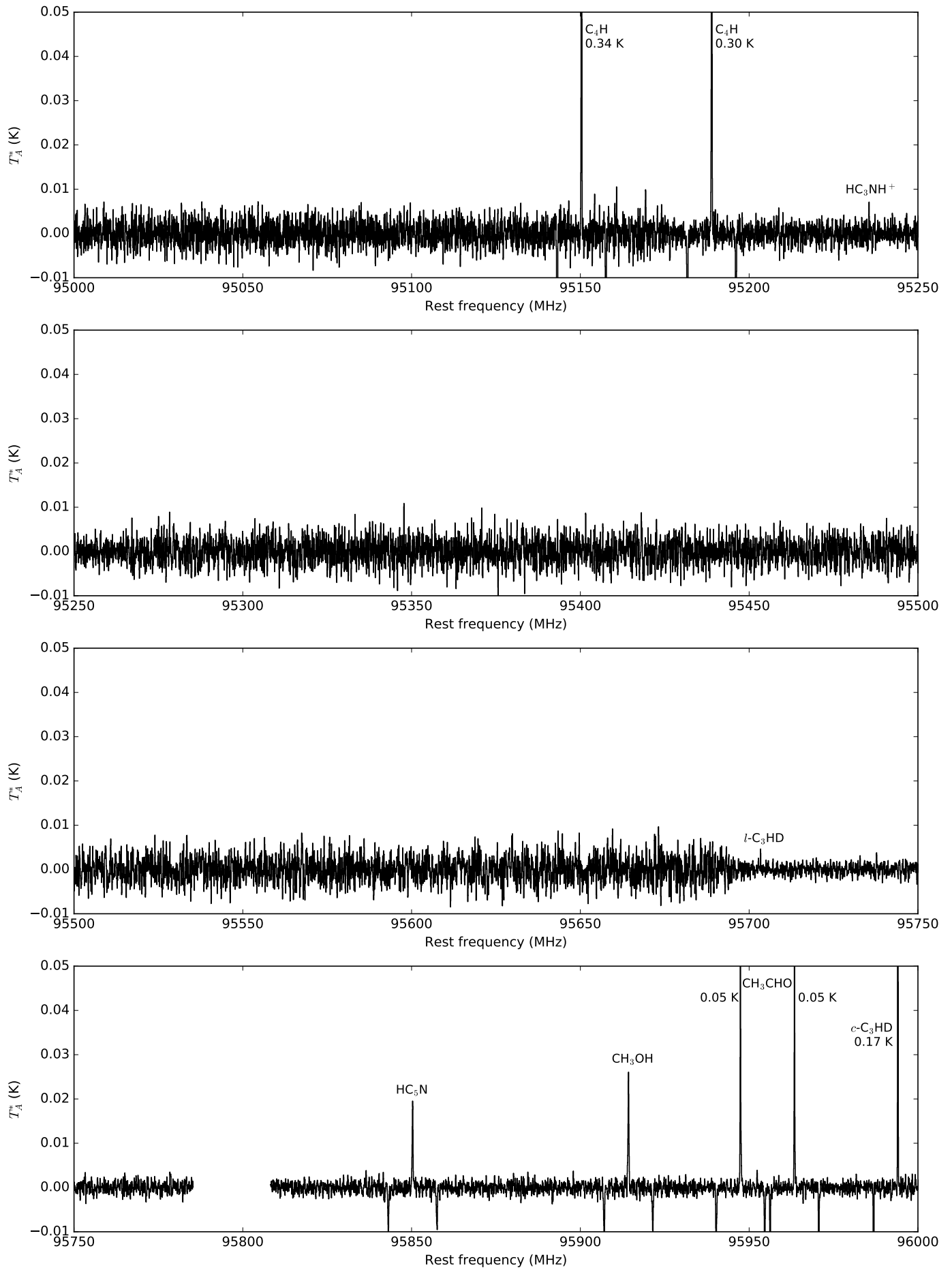


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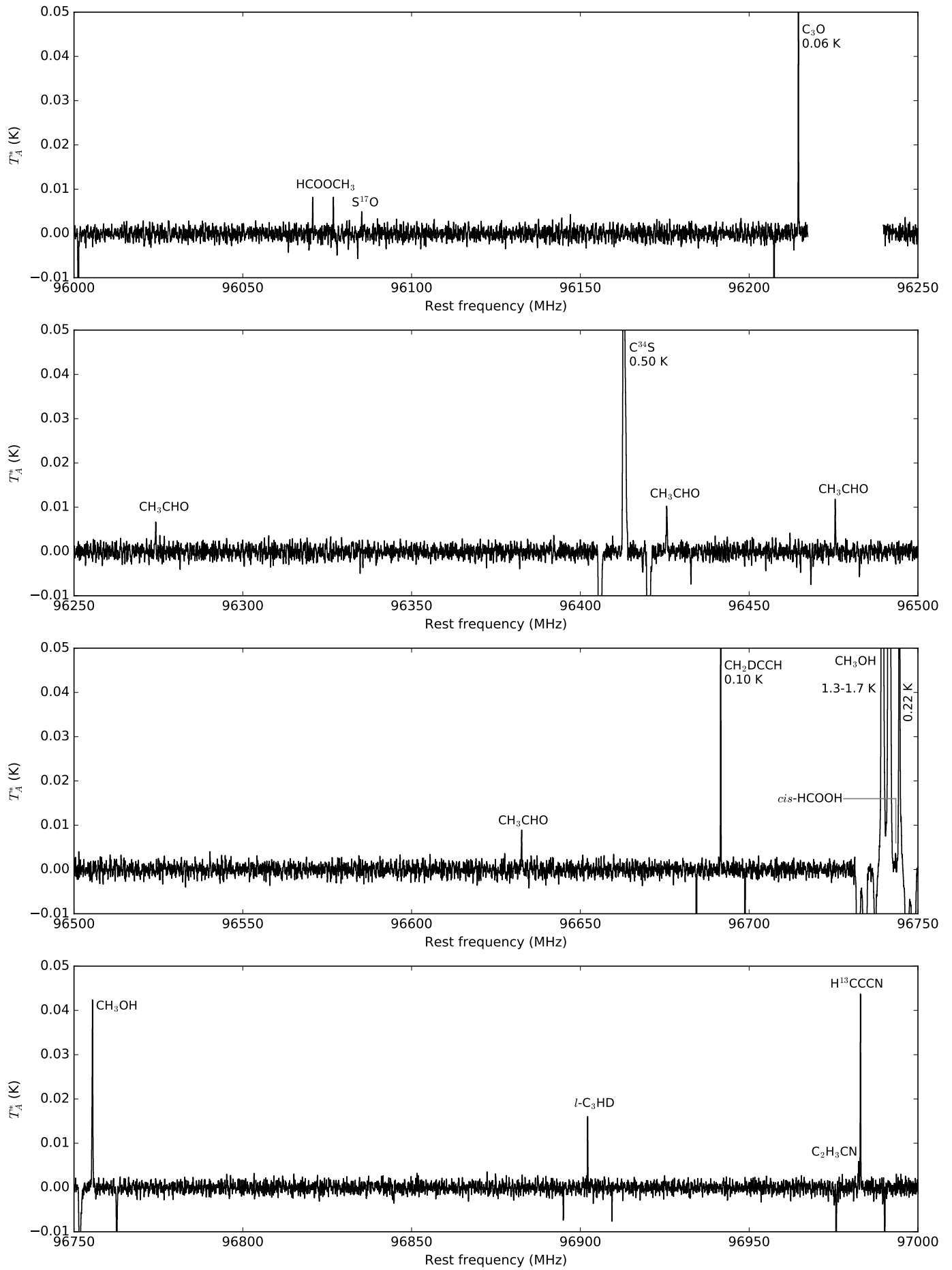


Fig. A.1. Continued

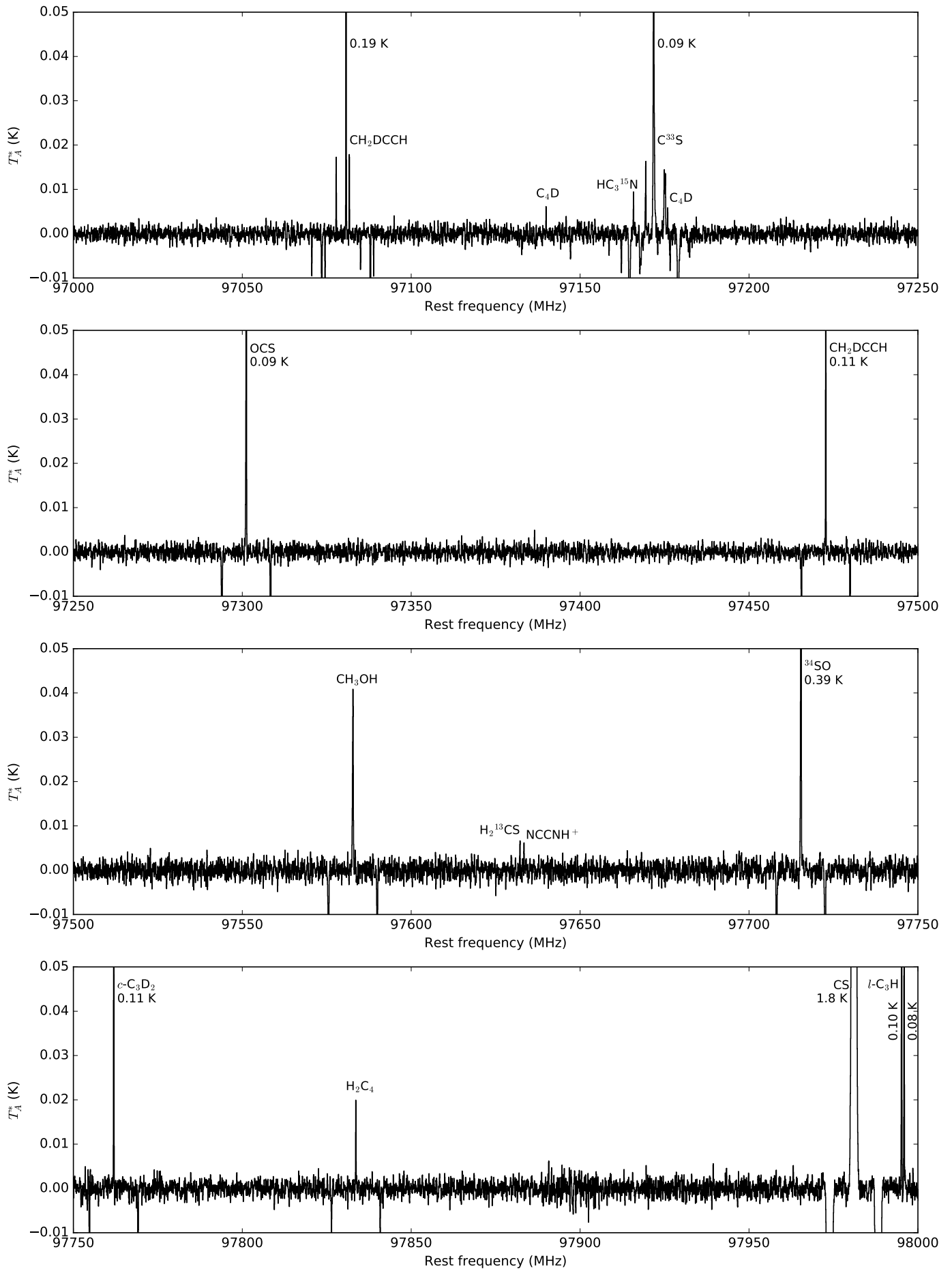


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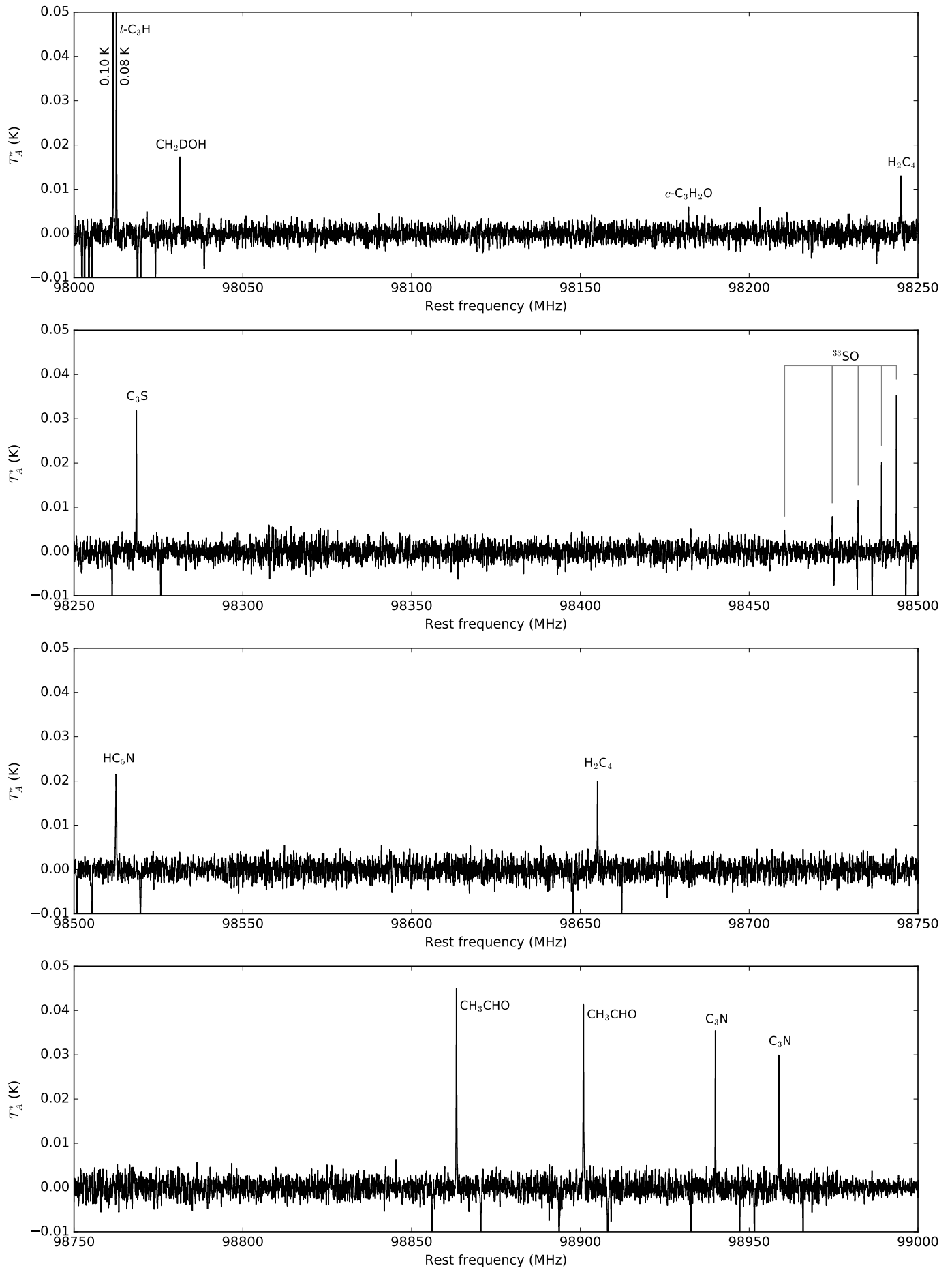


Fig. A.1. Continued

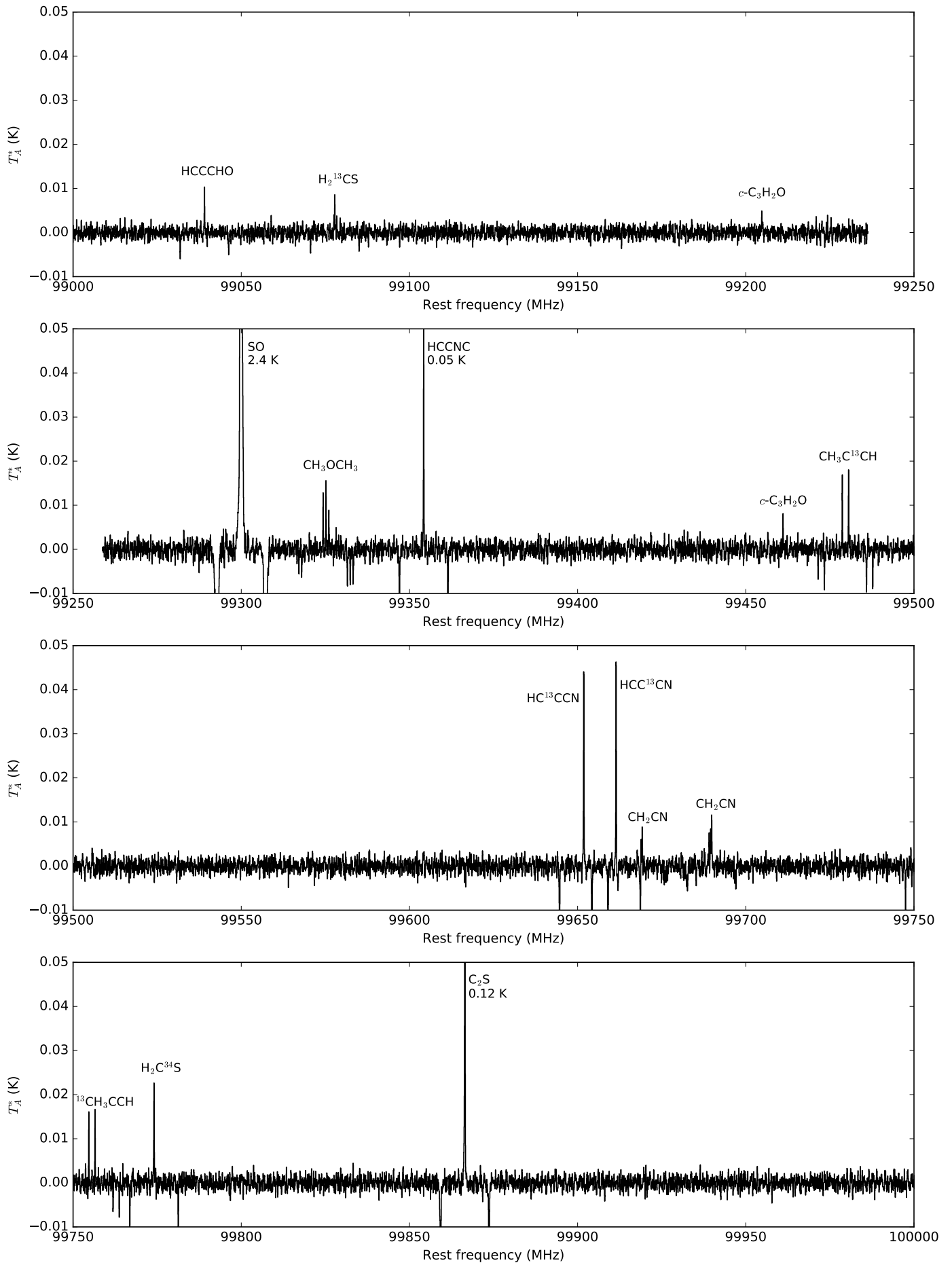


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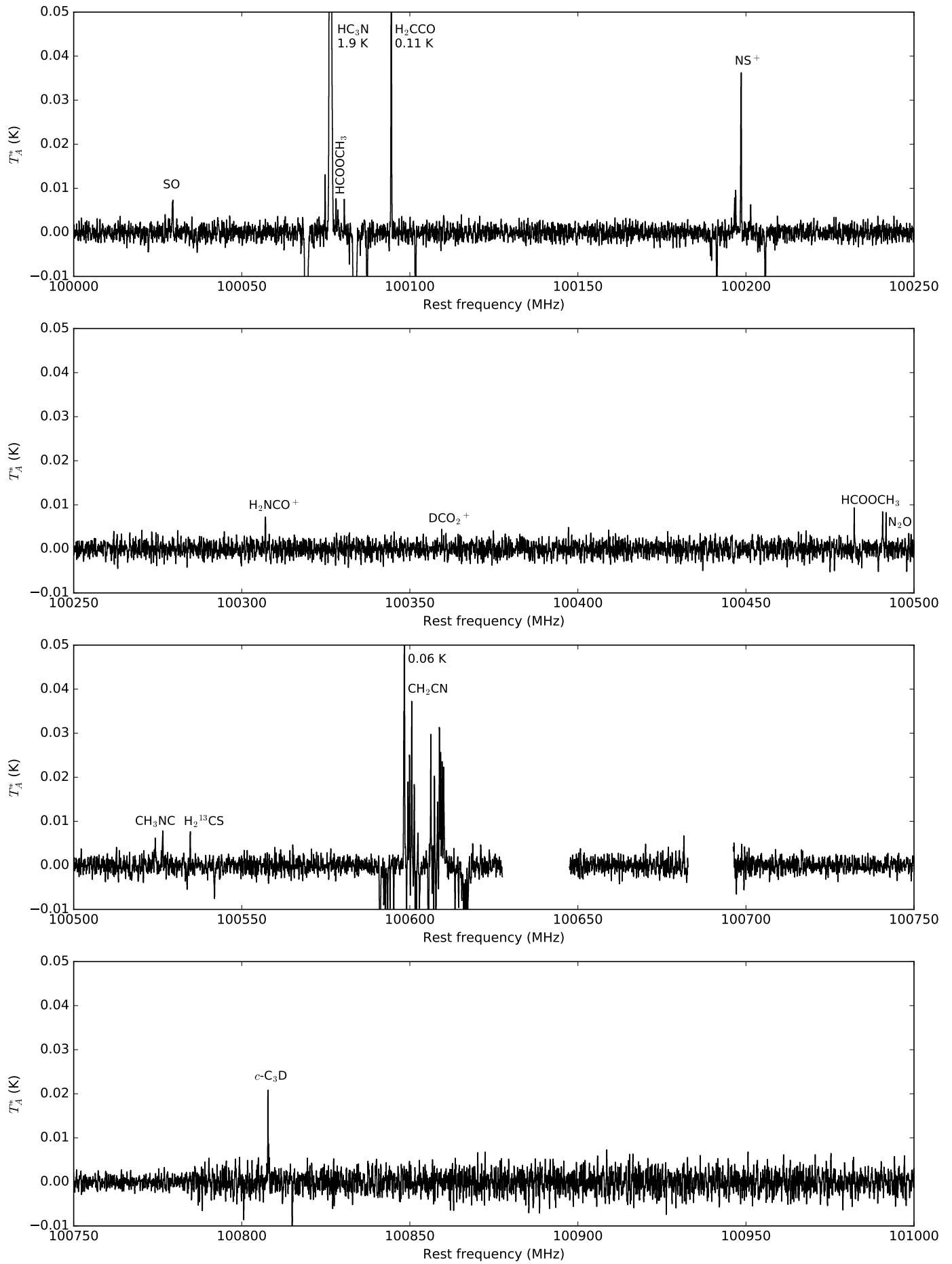


Fig. A.1. Continued

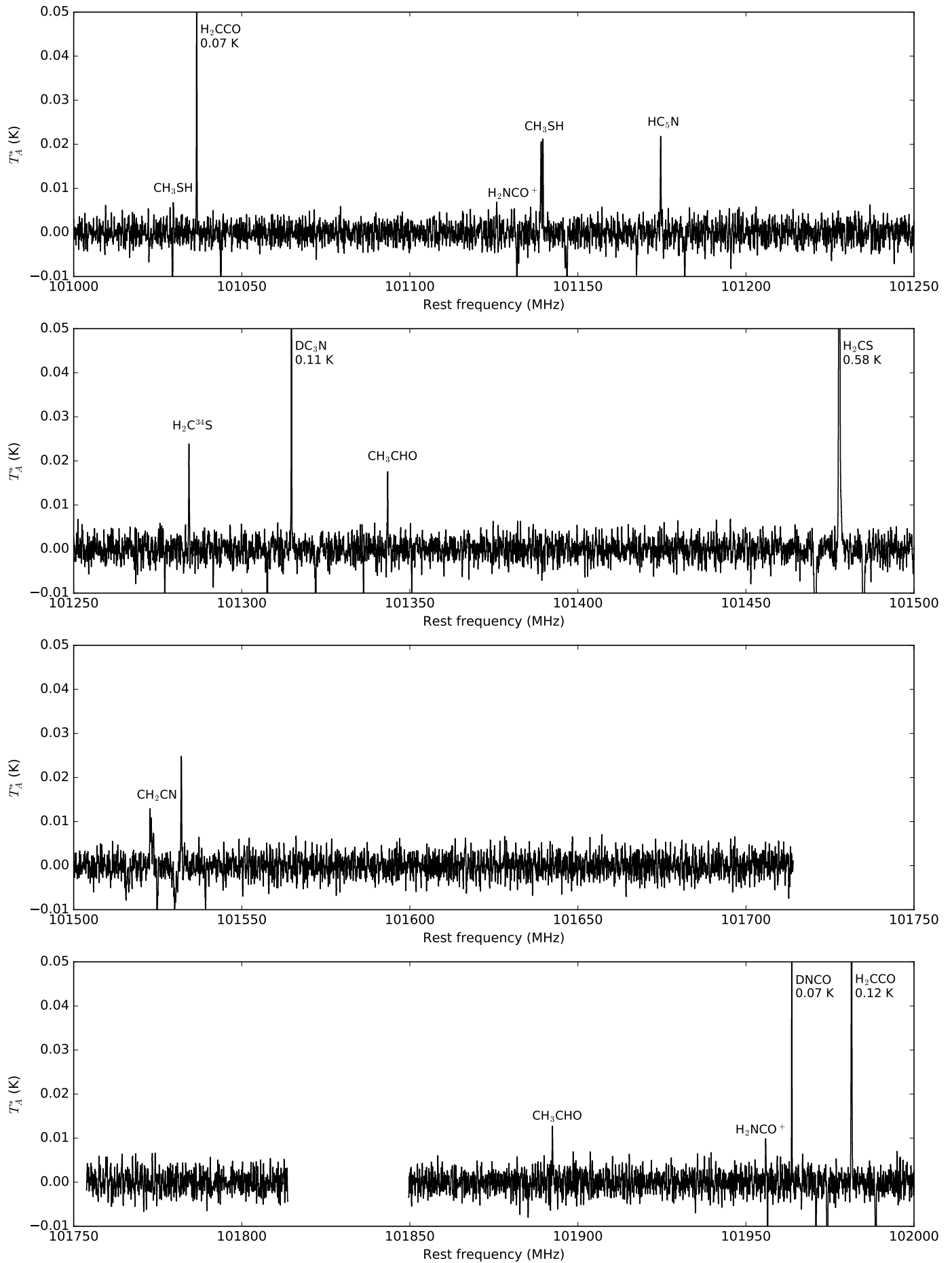


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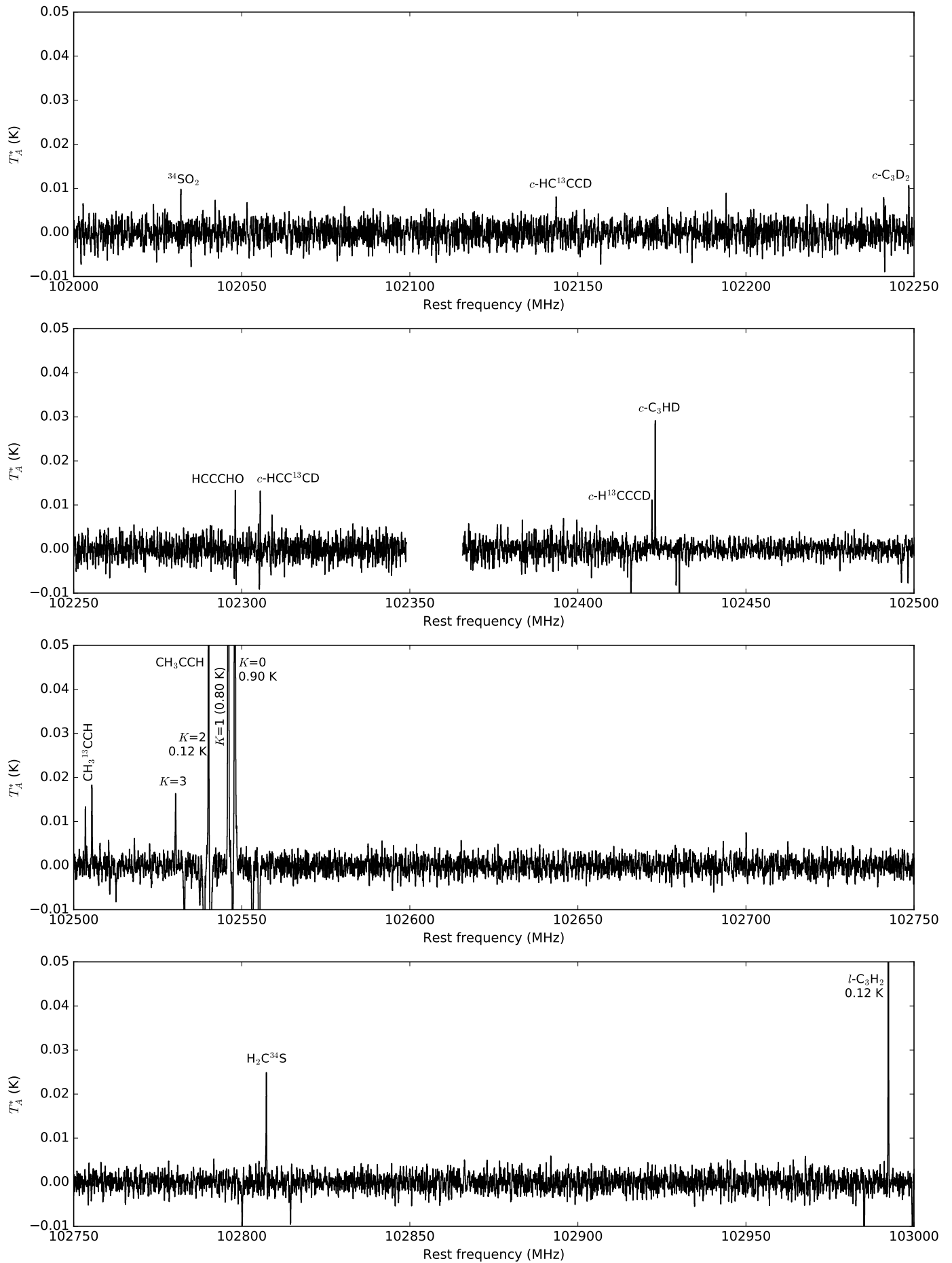


Fig. A.1. Continued

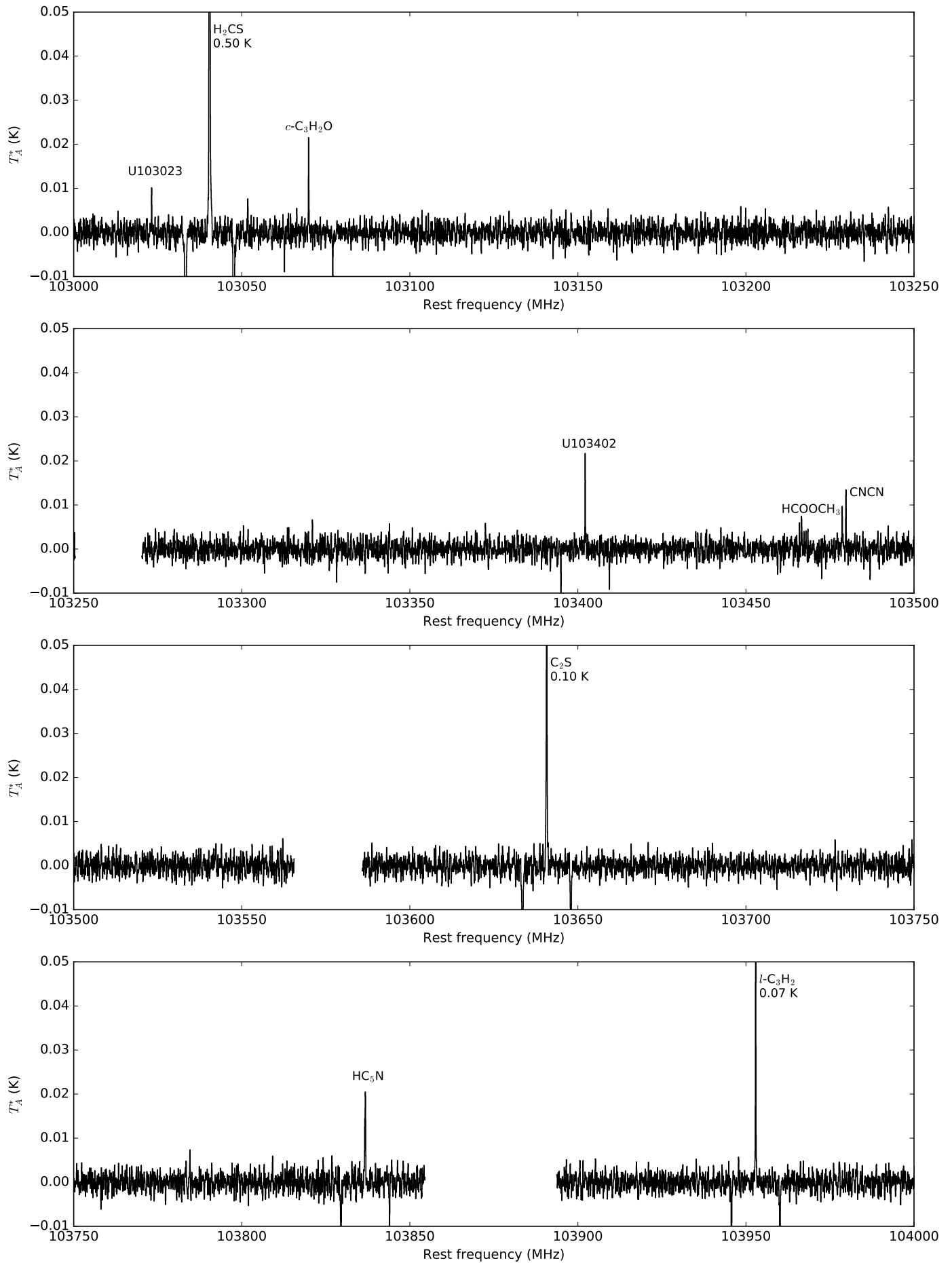


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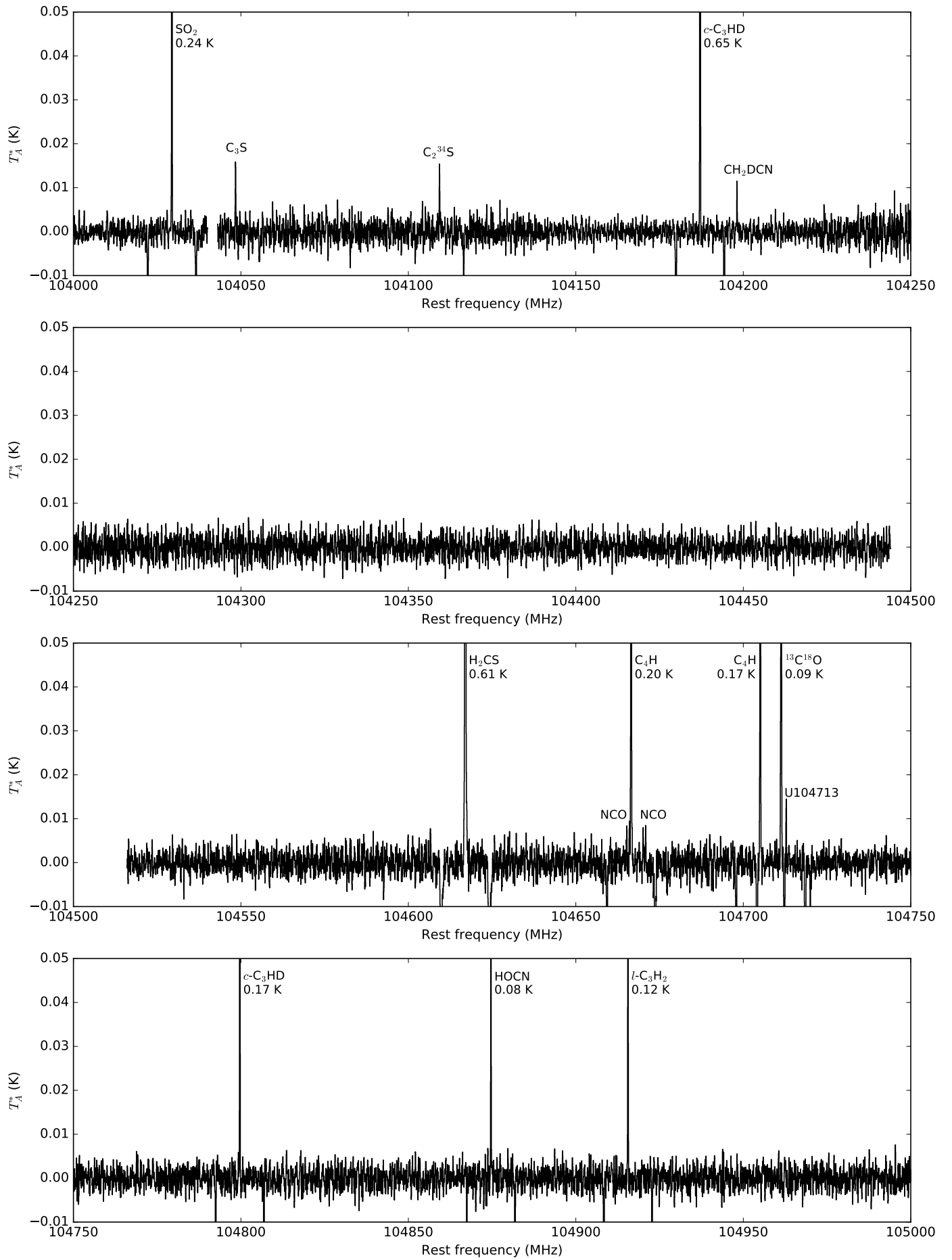


Fig. A.1. Continued

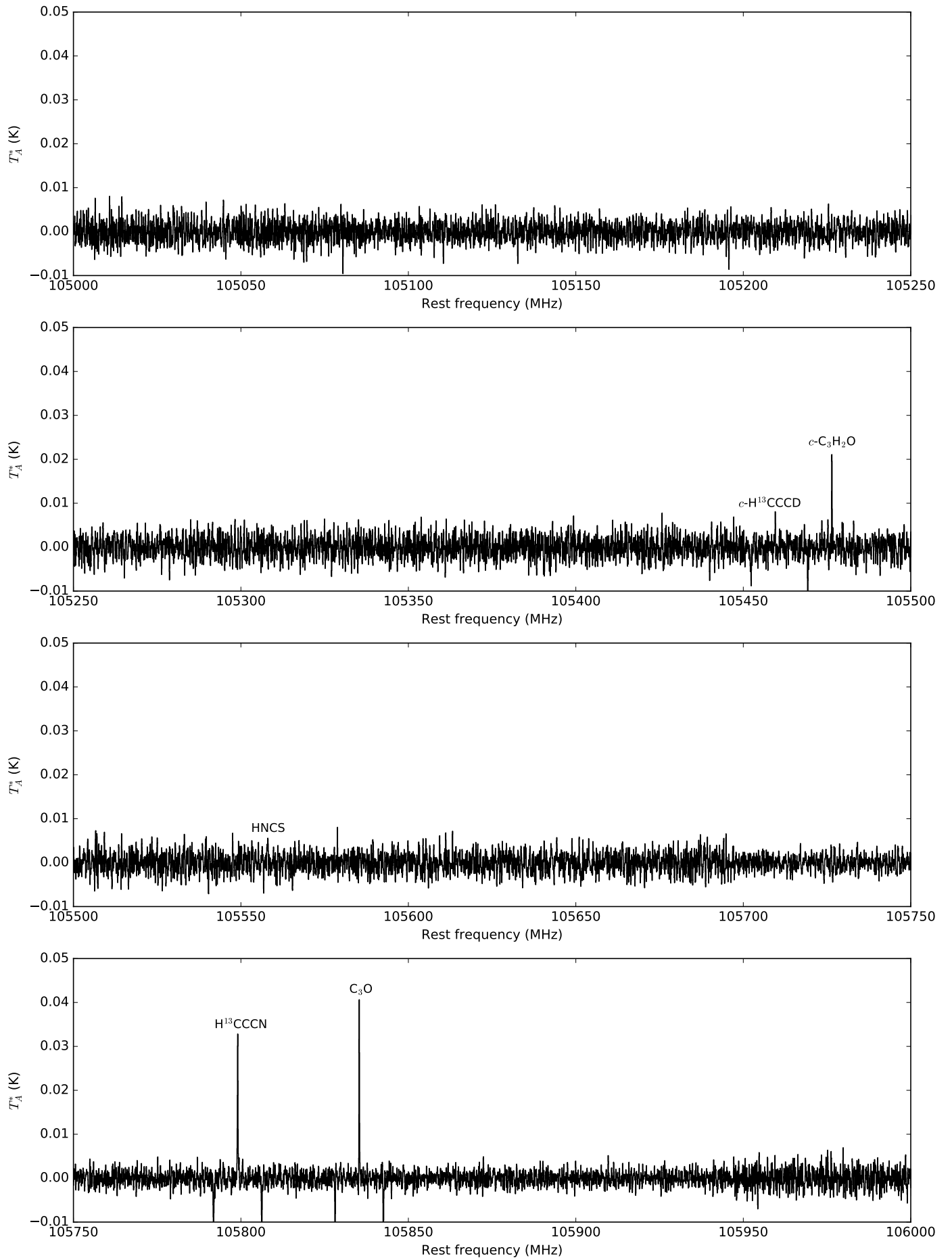


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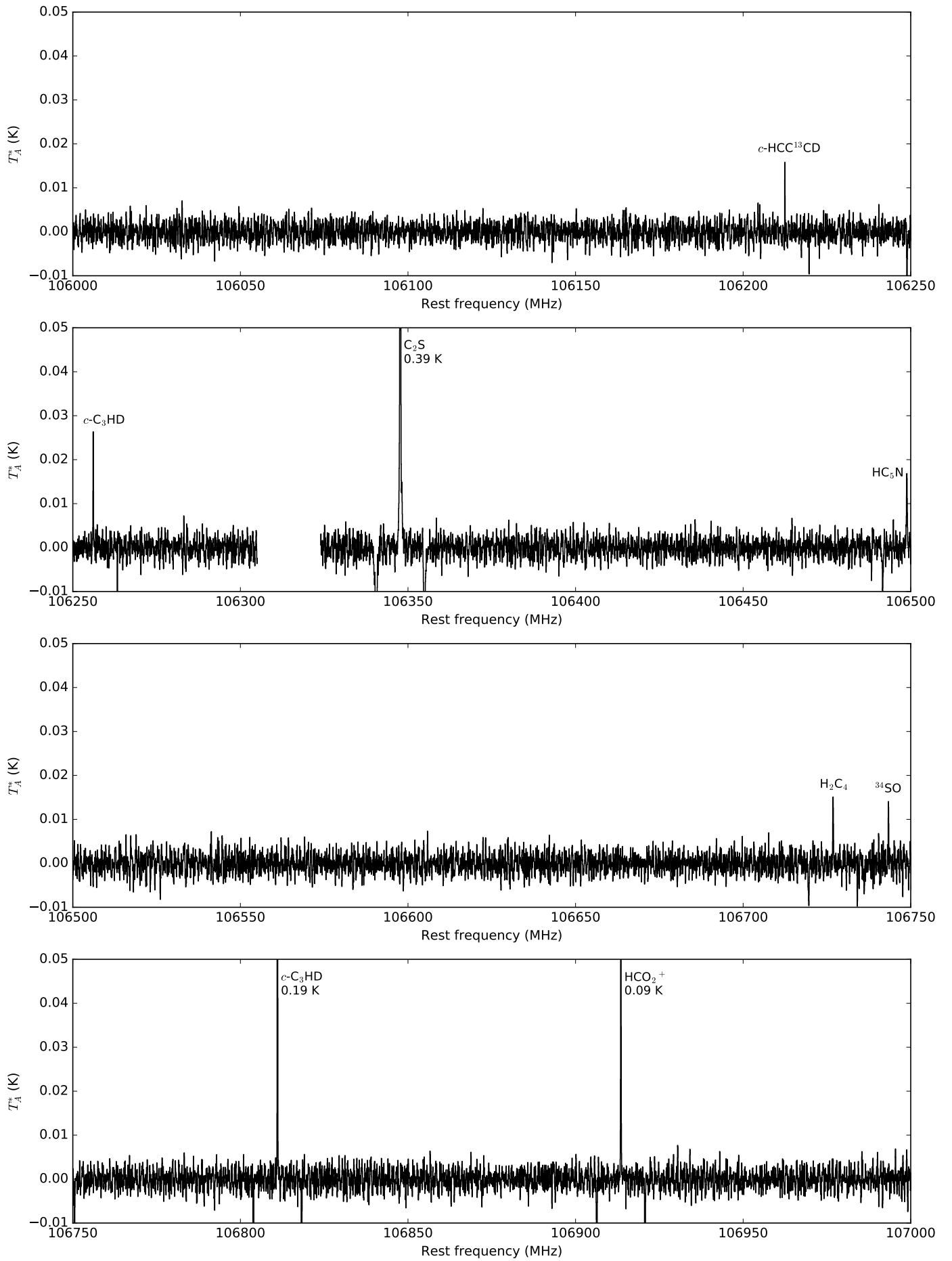


Fig. A.1. Continued

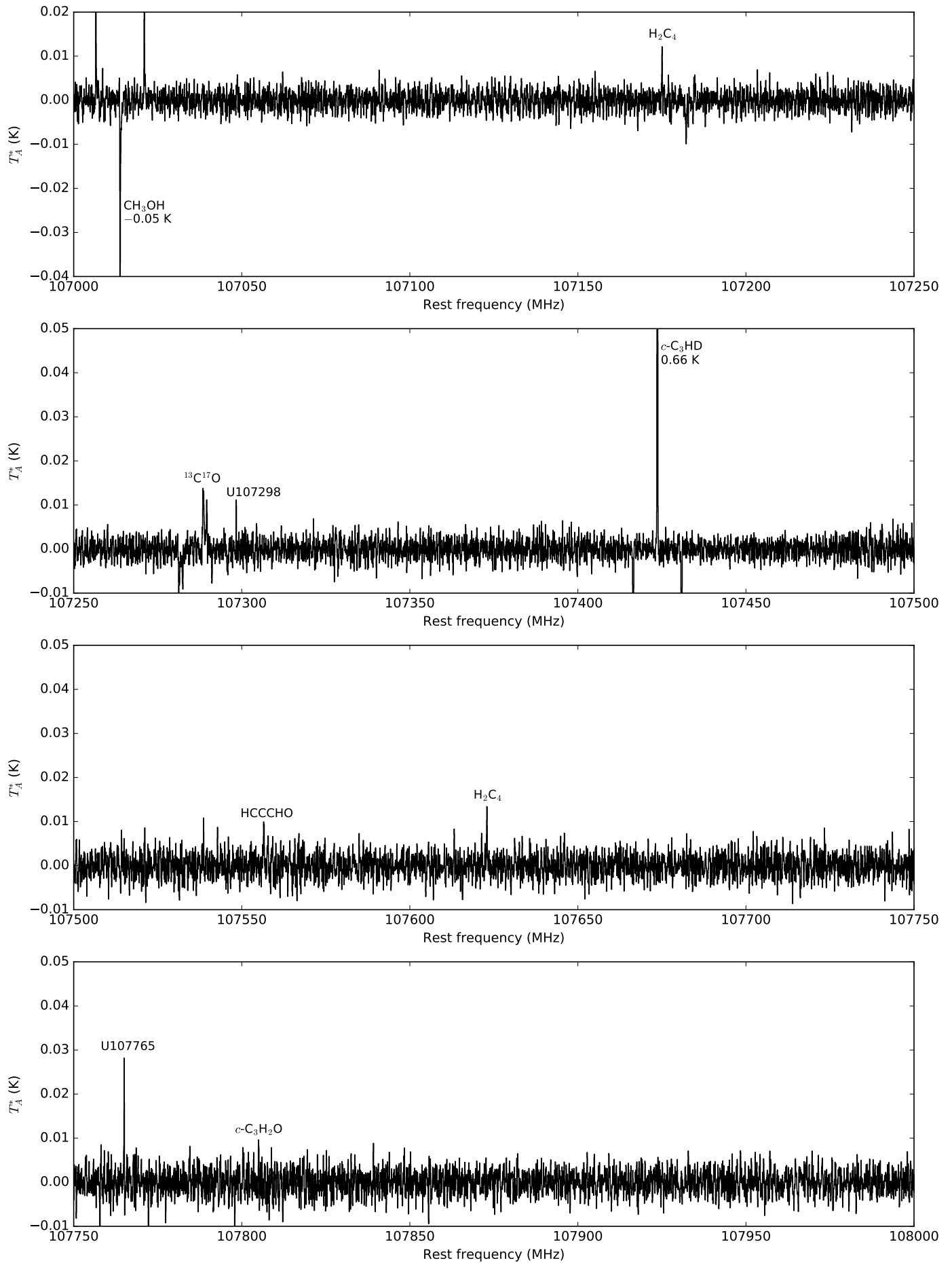


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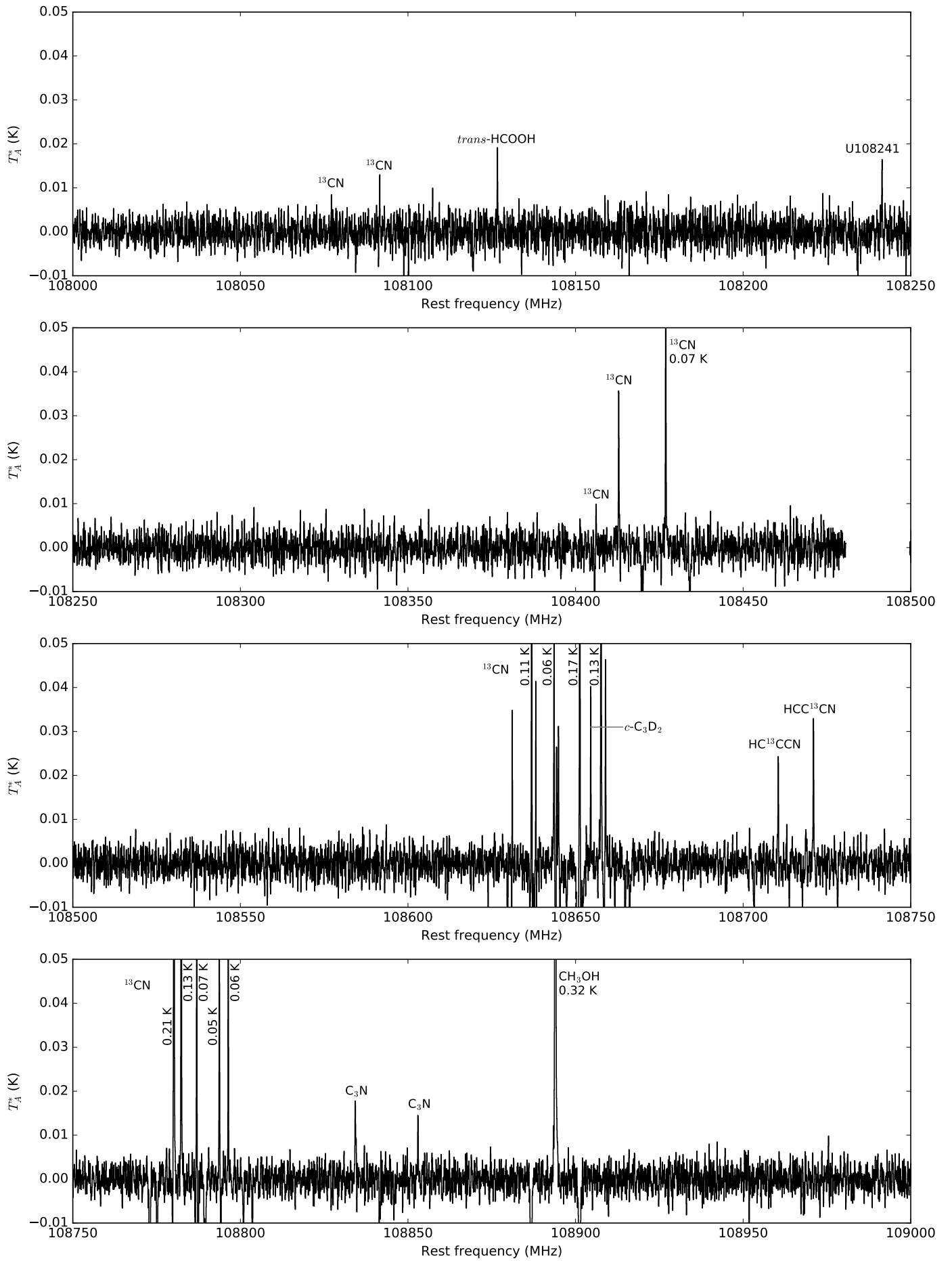


Fig. A.1. Continued

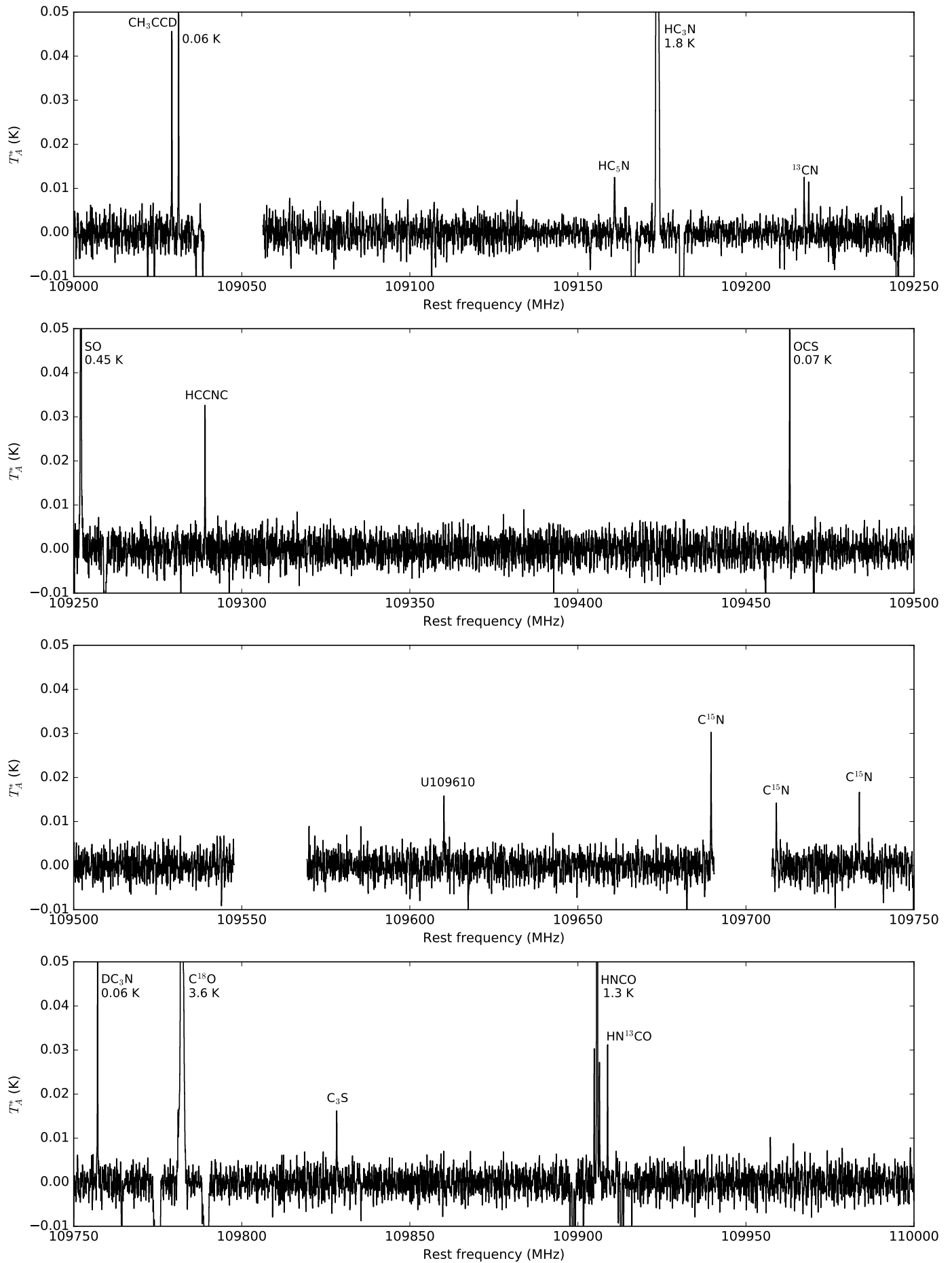


Fig. A.1. Continued
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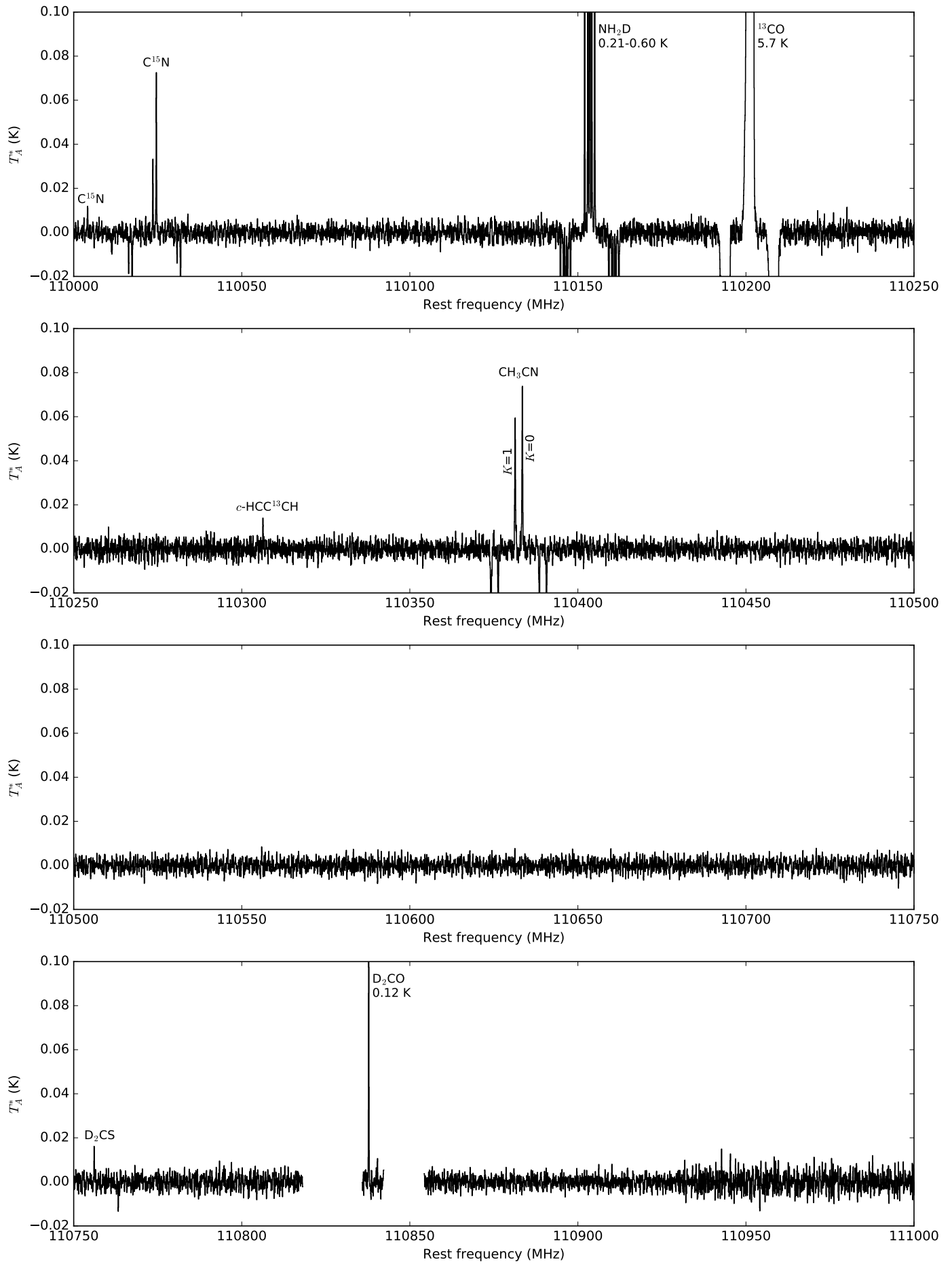


Fig. A.1. Continued

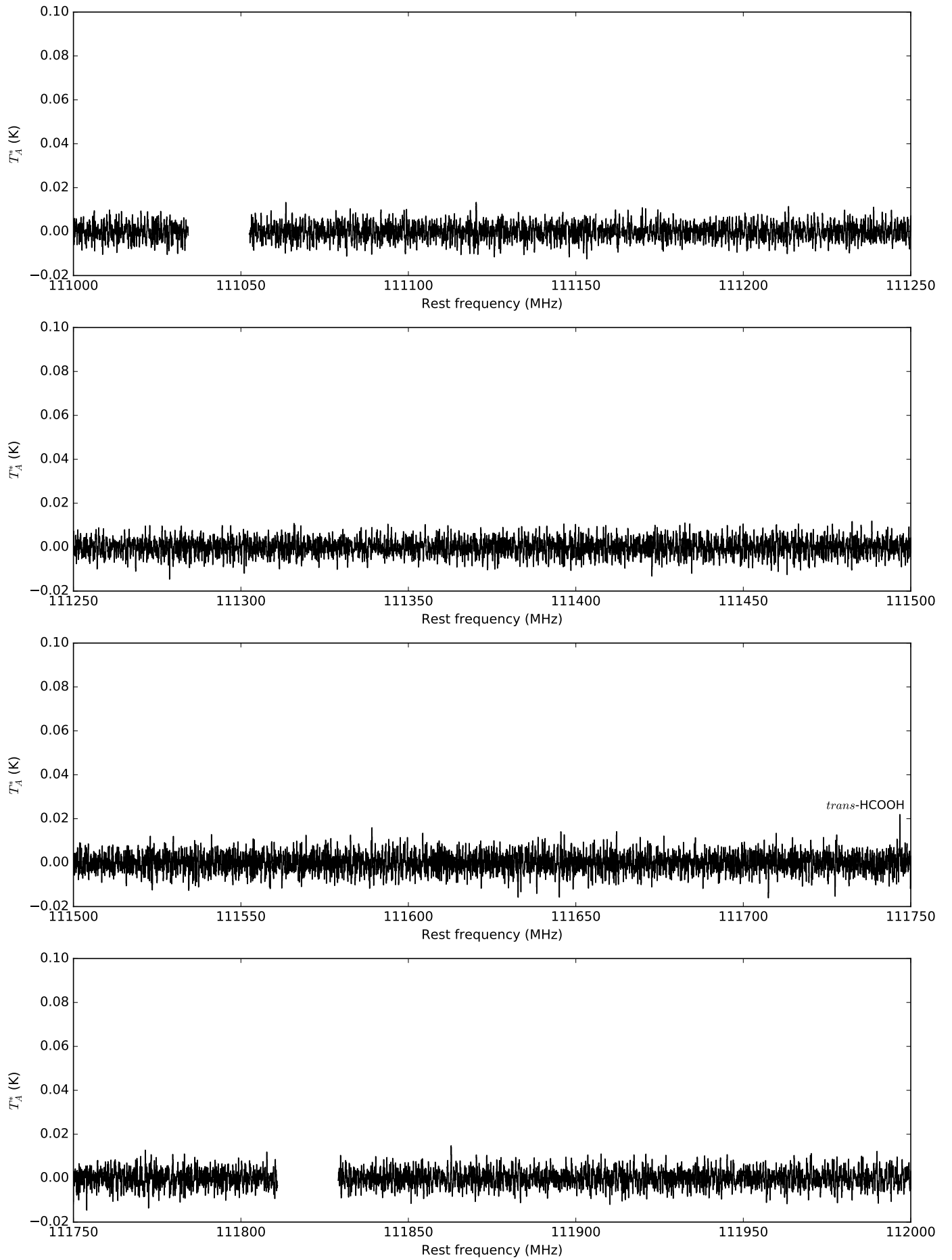


Fig. A.1. Continued
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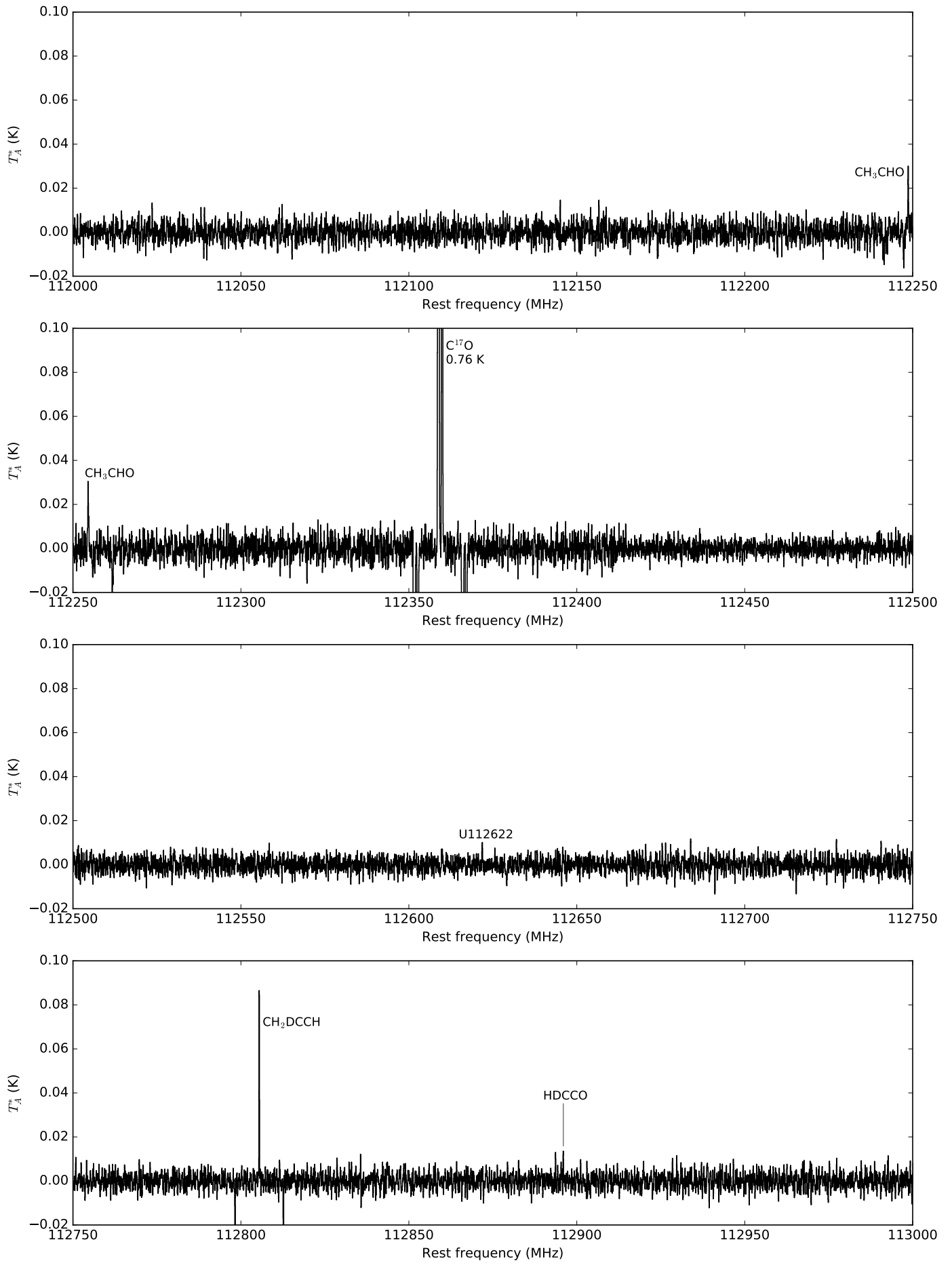


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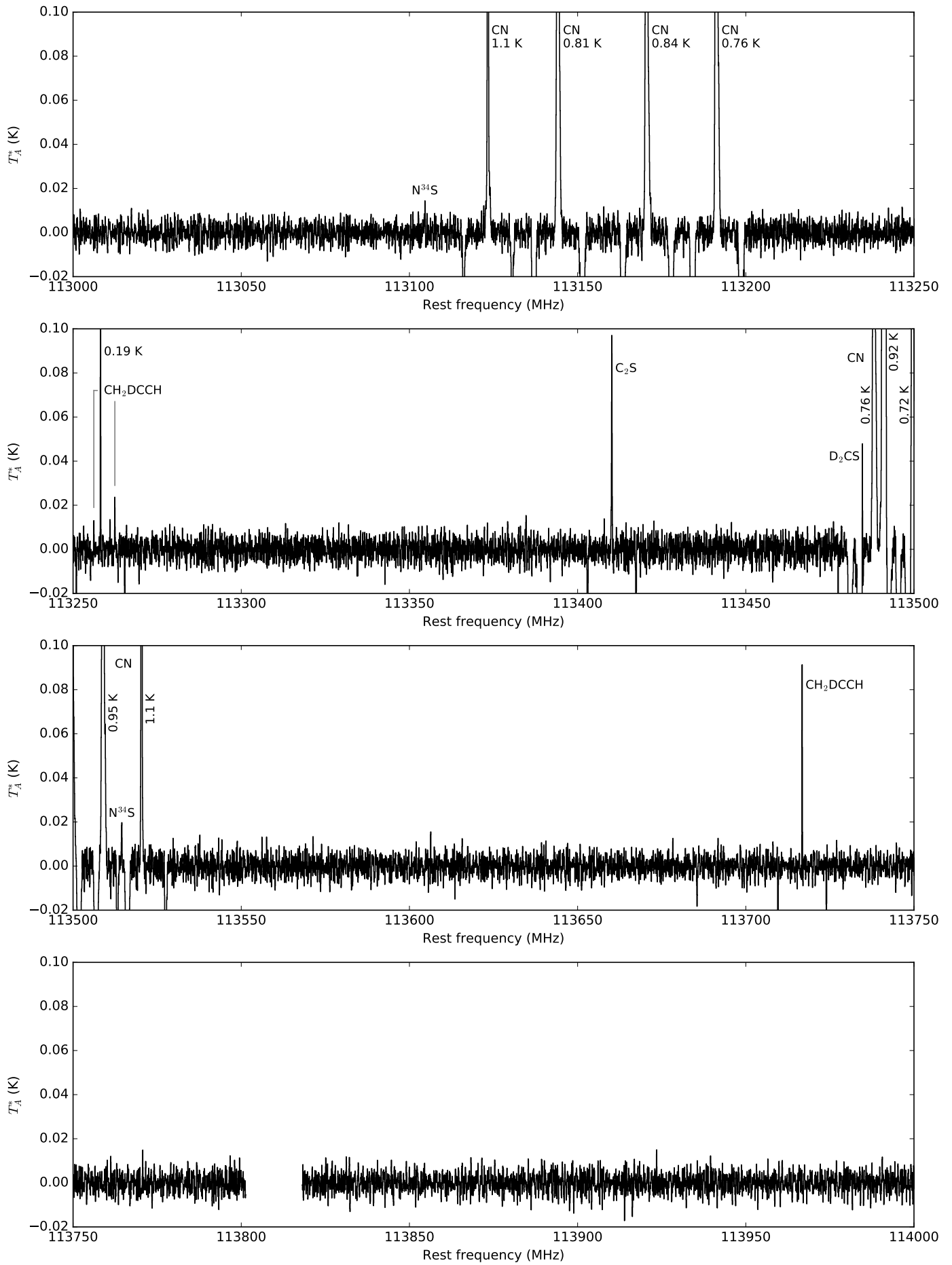


Fig. A.1. Continued
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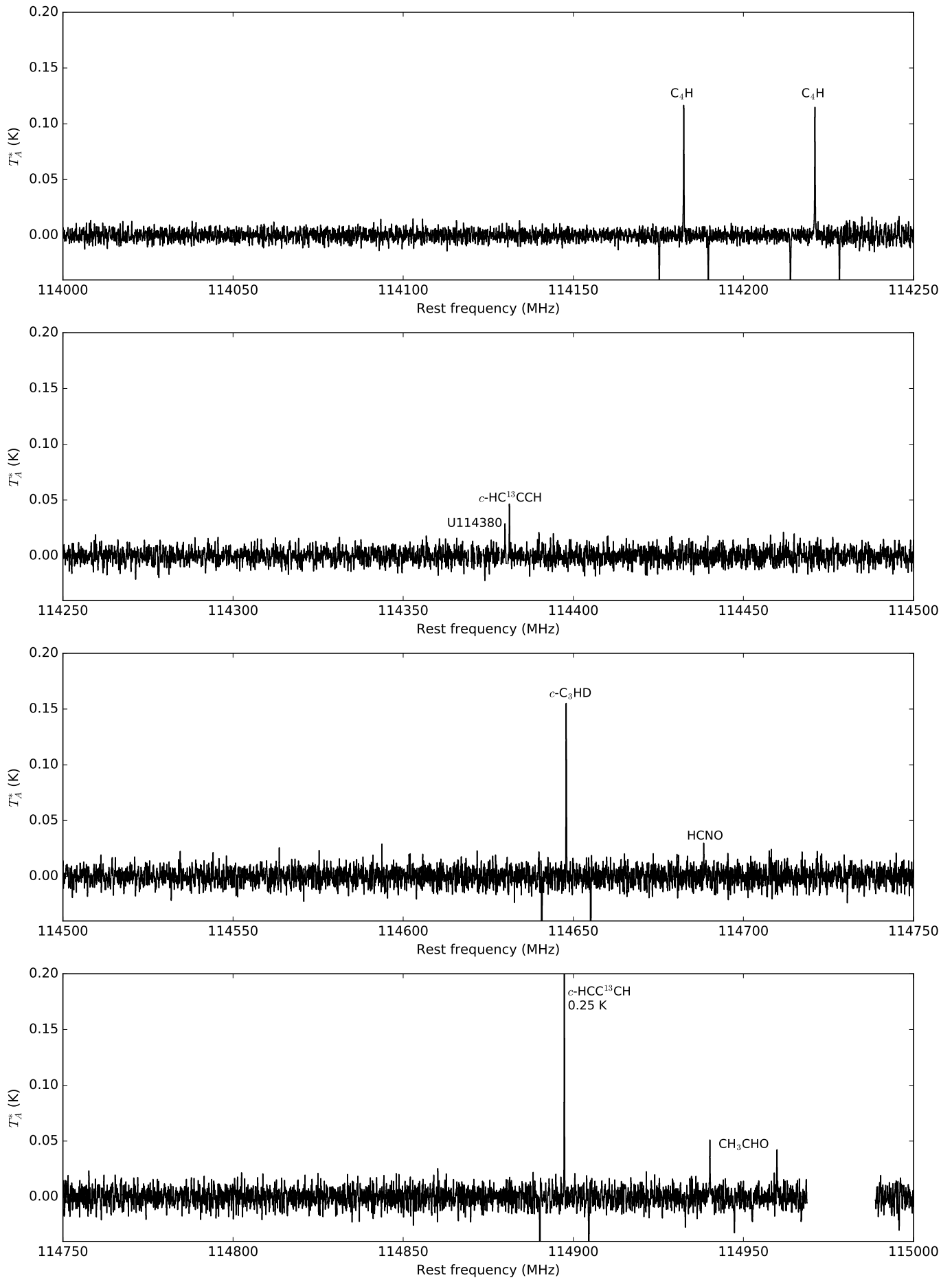


Fig. A.1. Continued

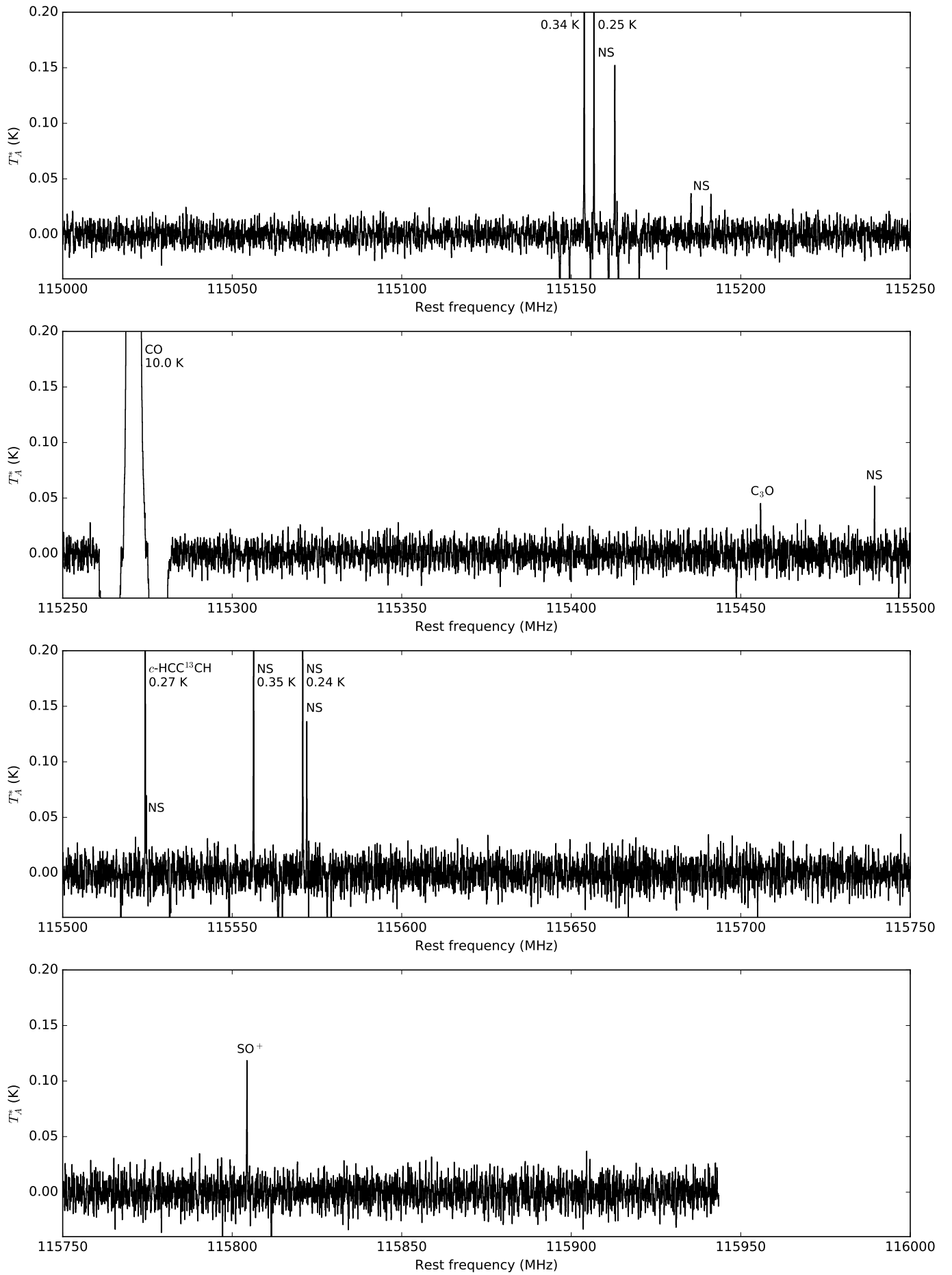


Fig. A.1. Continued
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