

ALMA spectral line and imaging survey of a low and a high mass-loss rate AGB star between 335 and 362 GHz (Corrigendum)

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A&A, 615, A28 (2018), <https://doi.org/10.1051/0004-6361/201732216>

Key words. stars: AGB and post-AGB – stars: mass-loss – circumstellar matter – stars: individual: IK Tau – stars: individual: R Dor – errata, addenda

An error occurred in Table A.2 during the production process: some extra values have been inserted. Here we publish the correct Table A.2.

Table A.2. Spectral lines observed in R Dor with ALMA.

(1) Molecule	(2) Quantum numbers	(3) ν_{rest} [GHz]	(4) E_{low} [K]	(5) Velocity ^a width [km s ⁻¹]	(6) Velocity ^a asymmetry [km s ⁻¹]	(7) Peak ^b flux [Jy]	(8) Integrated ^b flux [Jy km s ⁻¹]	(9) Velocity ^a width [km s ⁻¹]	(10) Velocity ^a asymmetry [km s ⁻¹]	(11) Peak ^b flux [Jy]	(12) Integrated ^b flux [Jy km s ⁻¹]	(13) Angular ^d width [mas]	(14) Comment ^c line identification	(15) Comment ^d morphology map
				Aperture 320 mas				Aperture 800 mas						
TiO ₂	24 _{8,16} → 24 _{7,17}	335.0670	273	15.73	5.6	0.037	—	15.73	5.6	0.036	—	435	Uncertain	—
SO ₂	20 _{4,16} → 20 _{3,17} ($\nu_2 = 1$)	335.1285	963	18.35	-0.5	0.137	1.399	16.60	1.2	0.138	1.200	517	Single	—
SiO	8 → 7 ($\nu = 5$)	335.2820	8735	26.20	-1.1	0.470	5.622	24.45	0.6	0.388	4.619	529	Single	Compact
SO ¹⁸ O	42 _{5,37} → 41 _{6,36}	335.4791	837	18.33	2.9	0.128	1.266	9.60	-2.2	0.129	0.795	517	Single	—
TiO ₂	29 _{5,27} → 29 _{4,28}	335.5054	303	20.07	-9.3	0.032	—	2.62	2.8	0.010	—	411	Single	—
SO ₂	29 _{5,25} → 30 _{2,28}	335.7732	447	13.08	-3.7	0.024	—	9.59	-0.3	0.027	—	376	Uncertain	—
²⁹ SiO	8 → 7 ($\nu = 3$)	335.8807	5282	27.89	-1.0	0.191	18.418	27.02	-1.9	1.859	16.752	505	Single	Compact
SO ₂	23 _{3,21} → 23 _{2,22}	336.0892	260	29.43	0.0	1.025	10.101	20.71	0.0	2.144	18.243	1141	Low blend	Arc NW
H ₂ O	42 _{12,30} → 43 _{11,33}	336.1135	1166	16.08	0.0	0.087	1.107	14.34	0.0	0.119	1.101	505	High blend, uncert.	—
H ₂ O	5 _{2,3} → 6 _{1,6} ($\nu_2 = 1$)	336.2279	2940	29.61	3.3	0.925	11.712	26.99	0.7	0.797	9.921	505	Single	Compact
S ³⁴ SO ₂	35 _{11,25} → 36 _{10,26}	336.3796	1039	13.06	6.5	0.022	—	2.61	3.0	0.008	—	388	Single, uncert.	—
SO	11 ₁₀ → 10 ₁₀	336.5533	127	13.05	-2.4	0.069	0.622	11.31	-2.4	0.219	1.582	811	Single	Arc SW
³⁰ SiO	8 → 7 ($\nu = 1$)	336.6030	1805	33.92	-2.6	182.103	636.005	30.44	0.8	185.488	643.246	588	Single	Compact
SO ₂	16 _{7,9} → 17 _{6,12}	336.6696	229	18.26	-2.3	0.167	1.443	16.52	-2.3	0.223	1.797	647	Single	Irregular
SO ₂	20 _{1,19} → 19 _{2,18} ($\nu_2 = 1$)	336.7607	928	20.87	-2.6	0.144	—	16.52	-0.0	0.131	—	470	Single	—
TiO ₂	23 _{8,16} → 23 _{7,17}	336.8241	256	20.86	7.6	0.045	—	24.34	18.0	0.034	—	458	High blend	—
TiO ₂	25 _{1,25} → 24 _{0,24}	337.1961	198	10.90	0.0	0.074	—	9.16	0.0	0.194	—	847	Minor low blend	Irregular
TiO ₂	24 _{1,23} → 23 _{2,22}	337.2061	196	18.20	0.0	0.039	—	11.26	0.0	0.087	—	647	Minor high blend	extension S
SO ₂	57 _{6,52} → 56 _{7,49} ($\nu_2 = 1$)	337.3497	2347	6.94	4.4	0.026	0.152	2.60	0.0	0.057	0.082	329	Single, uncert.	Irregular
³⁴ SO	8 → 7 ₇	337.5822	70	19.95	3.6	0.263	2.685	23.42	0.2	1.011	9.093	4480	Single	Resolved out
SiO	8 → 7 ($\nu = 4$)	337.6873	7034	26.01	9.0	0.462	4.891	25.14	6.4	0.482	4.903	541	Single	Compact
³⁴ SO ₂	34 _{3,29} → 34 _{4,30}	337.8727	593	12.25	0.0	0.071	—	10.52	0.0	0.104	—	411	Minor low blend	Irregular
SO	8 ₇ → 7 ₆ ($\nu = 1$)	337.8862	1664	31.38	0.0	0.225	3.563	24.45	0.0	0.289	3.681	564	High-mid blend	Compact
TiO ₂	23 _{16,8} → 24 _{15,9}	337.8946	465	16.48	0.0	0.089	—	9.54	0.0	0.136	—	376	Minor high blend	Offset
²⁹ SiO	8 → 7 ($\nu = 2$)	338.2452	3558	29.43	-0.9	2.072	21.494	26.83	-0.0	2.119	21.734	611	Single	Compact
SO ₂	4 _{3,1} → 3 _{2,2} ($\nu_2 = 1$)	338.3487	761	15.58	-2.6	0.052	0.512	11.25	1.6	0.079	0.431	529	Single	Compact
SO ₂	8 _{2,6} → 7 _{1,7} ($\nu_2 = 1$)	338.3764	772	10.38	1.4	0.035	0.213	12.98	0.5	0.069	0.482	388	Single	—
SO ₂	20 _{1,19} → 19 _{2,18}	338.6118	183	30.26	-4.5	1.427	15.070	29.40	-7.1	3.813	34.869	4720	Single	Resolved out
³⁴ SO ₂	14 _{4,10} → 14 _{3,11}	338.7857	118	10.37	-0.1	0.053	0.387	11.23	-0.0	0.117	0.781	529	Single, uncert.	Irregular
SO ₂	47 _{13,35} → 48 _{12,36}	338.8698	1434	12.96	-0.8	0.073	0.619	17.28	0.0	0.085	0.652	541	Single	—
³⁰ SiO	8 → 7 ($\nu = 0$)	338.9301	57	37.15	2.2	10.064	91.919	37.15	2.2	37.474	300.720	6880	Single	Resolved out
H ₂ O	16 _{6,11} → 17 _{3,14} ($\nu_2 = 0$)	339.0440	5485	19.86	3.2	0.295	3.572	18.13	1.5	0.334	3.457	388	Single	Compact
SO	3 ₃ → 2 ₃	339.3415	9	12.94	-0.8	0.070	0.636	15.53	1.7	0.352	2.973	4720	Single	Irregular
CO	3 → 2 ($\nu = 2$)	339.4995	6148	8.62	-0.3	0.032	0.216	—	—	0.013	—	294	Single	Resolved out
³⁴ SO	8 ₉ → 7 ₈	339.8576	61	16.37	-0.0	0.296	2.839	17.23	2.5	1.220	9.773	4960	Single	Irregular
SO ₂	65 _{6,57} → 64 _{0,54}	339.8909	2163	14.64	-5.0	0.049	0.400	9.48	7.0	0.084	0.432	341	Single, uncert.	—
SiO	8 → 7 ($\nu = 3$)	340.0947	5316	29.51	1.9	1.217	14.715	27.79	-3.2	1.242	14.528	470	Single	Compact
SO ₂	28 _{2,26} → 28 _{1,27}	340.3164	376	29.25	-3.5	0.747	7.191	32.69	-5.2	1.528	13.213	2058	Single	Irregular-Arc NW

Notes. The asterisks in the penultimate column denote if no fiducial measurements could be made. ^(a) Values for the velocity width, velocity asymmetry, and angular width are given only in the case of clear detections. ^(b) Values for the peak flux and integrated flux are given only for non-blended lines or lines with a minor blend contribution. ^(c) Comments based on appearance of line in the spectrum for the 300 mas extraction aperture. For more details: see Table A.1. ^(d) Comments based on the morphology of the zero-moment map. For more details: see Table A.1.

Table A.2. continued.

(1) Molecule	(2) Quantum numbers	(3) ν_{rest} [GHz]	(4) E_{low} [K]	(5) Velocity ^a width [km s ⁻¹]	(6) Velocity ^a asymmetry [km s ⁻¹]	(7) Peak ^b flux [Jy]	(8) Integrated ^b flux [Jy km s ⁻¹]	(9) Velocity ^a width [km s ⁻¹]	(10) Velocity ^a asymmetry [km s ⁻¹]	(11) Peak ^b flux [Jy]	(12) Integrated ^b flux [Jy km s ⁻¹]	(13) Angular ^a width [mas]	(14) Comment ^c line identification	(15) Comment ^d morphology map
				Aperture 320 mas										
²⁹ SiO	8 → 7 ($v = 1$)	340.6119	1816	30.09	1.7	0.959	13.149	29.23	2.6	1.016	13.321	494	Single	Compact
SO	8 ₇ → 7 ₆	340.7142	65	31.79	-3.8	2.725	29.809	33.51	-5.5	13.543	120.715	6640	Single	Resolved out
³³ SO	8 ₈ → 7 ₇	340.8373	70	-	-	0.028	-	-	-	0.110	-	-	Minor hyper*	-
³³ SO	8 ₈ → 7 ₇	340.8379	70	-	-	0.053	-	-	-	0.138	-	-	Minor hyper*	-
³³ SO	8 ₈ → 7 ₇	340.8387	70	-	-	0.032	-	-	-	0.118	-	-	Minor hyper*	-
³³ SO	8 ₈ → 7 ₇	340.8396	70	-	-	0.022	-	-	-	0.168	-	-	Minor hyper*	-
³³ SO	8 ₈ → 7 ₇	340.8417	70	9.45	-1.1	0.053	0.275	13.74	6.5	0.168	1.253	1120	Hyper	Faint scatter
³³ SO	8 ₈ → 7 ₇	340.8446	70	-	-	0.022	-	-	-	0.031	-	-	Minor hyper*	-
³³ SO	8 ₈ → 7 ₇	340.8463	70	-	-	0.023	-	-	-	0.013	-	-	Minor hyper*	-
SO ₂	70 _{10,60} → 69 _{11,59}	341.1364	2522	17.16	-4.1	0.106	1.098	15.45	-0.7	0.145	1.135	411	Single	Compact
SO ₂	21 _{8,14} → 22 _{7,15}	341.2755	353	18.87	-1.6	0.181	1.697	15.44	1.7	0.243	1.794	705	Single	-
SO ₂	52 _{14,38} → 53 _{13,41}	341.3219	1729	28.36	0.0	(0.260)	-	23.21	0.0	(0.285)	-	423	Minor low blend	Compact
SO ₂	53 _{6,48} → 52 _{7,45}	341.3233	1396	20.65	0.0	0.261	3.127	20.65	0.0	0.294	3.378	611	Single	Extension SE
SO ₂	40 _{4,36} → 40 _{3,37}	341.4031	792	23.15	0.3	0.792	7.621	23.15	2.4	0.982	9.032	1082	Single	-
SO	8 ₈ → 7 ₇ ($v = 1$)	341.5591	1671	21.43	1.5	0.226	2.582	15.43	0.3	0.221	2.322	352	Single	Compact
TiO ₂	32 _{3,29} → 32 _{2,30}	341.5939	383	6.86	5.2	0.038	0.199	6.00	2.6	0.067	0.201	400	Single	Compact
SO ₂	36 _{5,31} → 36 _{4,32}	341.6740	662	23.14	0.9	0.801	7.909	20.57	-1.6	1.021	9.213	1388	Single	Irregular
³⁴ SO ₂	5 _{3,3} → 4 _{2,2}	342.2089	19	-	-	(0.017)	-	-	-	(0.096)	-	-	Uncertain blend*	-
TiO ₂	15 _{8,8} → 15 _{7,9}	342.2173	141	-	-	(0.026)	-	-	-	(0.059)	-	-	Uncertain blend*	-
³⁴ SO ₂	20 _{1,19} → 19 _{2,18}	342.2316	182	17.97	-4.2	0.093	0.866	15.40	-1.7	0.253	1.856	894	Single except uncert. blend	Irregular
³⁴ SO ₂	12 _{4,8} → 12 _{3,9}	342.3320	93	17.11	-7.1	0.061	0.563	11.97	-0.3	0.177	1.112	941	Single	Irregular
SO ₂	23 _{3,21} → 23 _{2,22} ($v_2 = 1$)	342.4359	1005	17.95	-0.5	0.118	1.092	12.82	-5.6	0.141	1.048	470	Single	-
TiO ₂	14 _{8,6} → 14 _{7,7}	342.4909	130	21.38	0.0	(0.192)	-	14.54	0.0	(0.210)	-	352	Minor low blend	-
SiO	8 → 7 ($v = 2$)	342.5044	3580	21.67	0.0	0.392	5.615	21.67	0.0	0.391	5.549	482	High blend	Compact
CO	3 → 2 ($v = 1$)	342.6476	3101	17.94	0.7	0.242	2.609	19.65	2.4	0.273	2.773	364	Single	Compact
SO ₂	34 _{3,31} → 34 _{2,32}	342.7616	566	29.04	-0.5	0.899	8.791	28.19	-6.5	1.253	11.457	1200	Single	Irregular
TiO ₂	12 _{8,4} → 12 _{7,5}	342.8768	111	5.12	-4.0	0.035	0.216	13.66	-10.8	0.170	1.496	880	Single	Faint scatter
²⁹ SiO	8 → 7 ($v = 0$)	342.9808	58	41.20	0.4	8.682	83.081	39.27	-3.2	40.164	321.158	5200	Single	Resolved out-central absorption
TiO ₂	23 _{3,21} → 22 _{2,20}	343.0715	192	-	-	(0.024)	-	-	-	(0.073)	-	-	Uncertain blend*	-
³³ SO	8 ₈ → 7 ₇	343.0861	62	-	-	0.025	-	-	-	0.120	-	-	Minor hyper*	-
³³ SO	8 ₈ → 7 ₇	343.0873	62	10.24	-1.4	0.045	0.380	11.95	-1.4	0.199	1.355	160	Hyper	Faint scatter
³³ SO	8 ₈ → 7 ₇	343.0881	62	-	-	0.043	-	-	-	0.135	-	-	Minor hyper*	-
³³ SO	8 ₈ → 7 ₇	343.0883	62	-	-	0.043	-	-	-	0.135	-	-	Minor hyper*	-
TiO ₂	9 _{8,2} → 9 _{7,3}	343.1620	87	12.80	8.8	(0.036)	-	11.09	5.4	(0.027)	-	352	Uncertain	-
SO ₂	57 _{15,43} → 58 _{14,44}	343.4767	2052	11.93	1.5	0.035	0.318	0.85	2.3	0.078	0.325	317	Single	-
SO	8 ₈ → 7 ₇ ($v = 1$)	343.8285	1662	28.10	6.1	0.306	3.543	21.29	-0.6	0.347	3.529	411	Single uncert.	Compact
SO ₂	24 _{2,22} → 23 _{3,21} ($v_2 = 1$)	343.9237	1022	17.03	-0.7	0.117	1.077	11.07	-6.6	0.138	0.885	400	Single	Compact
³⁴ SO ₂	10 _{4,6} → 10 _{3,7}	344.2453	72	9.36	-2.7	0.046	0.264	11.06	-1.0	0.137	0.714	364	Single, uncert.	Irregular
SO	8 ₈ → 7 ₇	344.3106	71	33.16	-1.2	0.141	34.851	31.46	-2.9	14.548	130.540	3882	Single	Arc NW
AlO	9 _{17/2} → 8 _{15/2}	344.4279	66	-	-	0.041	-	-	-	0.047	-	-	Minor hyper*	-
AlO	9 _{17/2} → 8 _{15/2}	344.4334	66	-	-	0.067	-	-	-	0.070	-	-	Minor hyper*	-
AlO	9 _{17/2} → 8 _{15/2}	344.4403	66	-	-	0.091	-	-	-	0.116	-	-	Minor hyper*	-
AlO	9 _{17/2} → 8 _{15/2}	344.4429	66	-	-	0.100	-	-	-	0.103	-	-	Minor hyper*	-
AlO	9 _{17/2} → 8 _{15/2}	344.4463	66	-	-	0.100	-	-	-	0.111	-	-	Minor hyper*	-
AlO	9 _{17/2} → 8 _{15/2}	344.4519	66	-	-	0.101	-	-	-	0.114	-	-	Minor hyper*	-
AlO	9 _{17/2} → 8 _{15/2}	344.4533	66	-	-	0.103	-	-	-	0.067	-	-	Minor hyper*	-
AlO	9 _{19/2} → 8 _{17/2}	344.4575	66	51.00	3.6	0.128	4.032	47.60	10.4	0.166	4.570	529	Hyper	Irregular
AlO	9 _{19/2} → 8 _{17/2}	344.4581	66	-	-	0.087	-	-	-	0.122	-	-	Minor hyper*	-
AlO	9 _{19/2} → 8 _{17/2}	344.4630	66	-	-	0.108	-	-	-	0.137	-	-	Minor hyper*	-

Table A.2. continued.

(1) Molecule	(2) Quantum numbers	(3) ν_{rest} [GHz]	(4) E_{low} [K]	(5) Velocity ^a width [km s ⁻¹]	(6) Velocity ^a asymmetry [km s ⁻¹]	(7) Peak ^b flux [Jy]	(8) Integrated ^b flux [Jy km s ⁻¹]	(9) Velocity ^a width [km s ⁻¹]	(10) Velocity ^a asymmetry [km s ⁻¹]	(11) Peak ^b flux [Jy]	(12) Integrated ^b flux [Jy km s ⁻¹]	(13) Angular ^a width [mas]	(14) Comment ^c line identification	(15) Comment ^d mom0 map
Aperture 800 mas														
AlO	9 _{1/2} → 8 _{17/2}	344.4630	66	—	—	0.108	—	—	—	0.137	—	—	Minor hyper*	—
AlO	9 _{17/2} → 8 _{15/2}	344.4675	66	—	—	0.101	—	—	—	0.115	—	—	Minor hyper*	—
AlO	9 _{19/2} → 8 _{17/2}	344.4686	66	—	—	0.077	—	—	—	0.102	—	—	Minor hyper*	—
AlO	9 _{19/2} → 8 _{17/2}	344.4762	66	—	—	0.077	—	—	—	0.091	—	—	Minor hyper*	—
³⁴ SO ₂	19 _{1,19} → 18 _{0,18}	344.5810	151	16.99	-2.3	0.119	1.120	14.44	0.1	0.268	2.358	705	Single	Irregular
SO ₂	28 _{2,26} → 28 _{1,27} ($\nu_2 = 1$)	344.6137	1121	19.54	2.7	0.126	1.305	16.14	-2.3	0.137	1.019	470	Single	—
³⁴ SO ₂	13 _{4,10} → 13 _{3,11}	344.8079	105	12.74	-0.9	0.064	0.380	11.89	-0.1	0.102	0.739	764	Single, uncert.	Irregular
SiO	8 → 7 ($\nu = 1$)	344.9163	1828	36.50	7.5	1.893	27.776	37.35	3.2	2.307	31.337	1341	Single	Core-halo
SO ₂	40 _{4,36} → 40 _{3,37} ($\nu_2 = 1$)	344.9742	1538	22.44	0.0	0.175	1.954	12.26	0.0	0.183	1.530	352	Low blend	Compact
³⁴ SO ₂	15 _{4,12} → 15 _{3,13}	344.9876	132	32.35	0.0	(0.047)	—	28.95	0.0	(0.096)	—	776	Negl. blend, uncert.	Irregular
³⁴ SO ₂	11 _{4,8} → 11 _{3,9}	344.9982	82	13.92	0.0	(0.041)	—	10.53	0.0	(0.102)	—	705	Negl. blend, uncert.	Extension SE
SO ₂	13 _{2,12} → 12 _{1,11}	345.3385	76	24.14	0.0	1.532	15.305	22.45	0.0	5.969	53.850	4720	Low blend	Resolved
H ¹³ CN	4 → 3	345.3397	25	31.43	0.0	1.532	15.515	38.21	0.0	5.969	54.182	4240	High blend	out-Arc NW
SO ¹⁷ O	5 _{3,3} → 4 _{2,2}	345.4221	19	12.71	3.9	0.040	0.373	4.24	-2.8	0.066	0.178	376	Single, uncert.	Resolved out
SO ₂	26 _{9,17} → 27 _{8,20}	345.4490	505	16.10	-1.8	0.168	1.483	17.80	-0.2	0.188	1.556	764	Single	—
TiO ₂	12 _{4,8} → 11 _{3,9}	345.5809	58	—	—	(0.029)	—	—	—	(0.047)	—	—	Uncertain blend*	—
CO	3 → 2	345.7960	17	36.41	-1.3	4.001	42.338	36.41	-4.7	15.003	141.896	5294	Single	Resolved
³⁴ SO ₂	17 _{4,14} → 17 _{3,15}	345.9293	162	11.85	-4.7	0.056	0.455	13.54	-1.3	0.130	0.887	941	Single, uncert.	out-Irregular- ARC NW
AlOH	11 _{23/2} → 10 _{23/2}	346.1534	83	—	—	0.021	—	—	—	0.006	—	—	Minor hyper*	—
AlOH	11 _{21/2} → 10 _{23/2}	346.1544	83	—	—	0.027	—	—	—	0.006	—	—	Minor hyper*	—
AlOH	11 _{27/2} → 10 _{25/2}	346.1555	83	—	—	0.019	—	—	—	0.006	—	—	Minor hyper*	—
AlOH	11 _{25/2} → 10 _{23/2}	346.1555	83	—	—	0.019	—	—	—	0.006	—	—	Minor hyper*	—
AlOH	11 _{23/2} → 10 _{21/2}	346.1555	83	—	—	0.019	—	—	—	0.006	—	—	Minor hyper*	—
AlOH	11 _{21/2} → 10 _{19/2}	346.1555	83	—	—	0.019	—	—	—	0.006	—	—	Minor hyper*	—
AlOH	11 _{19/2} → 10 _{17/2}	346.1555	83	—	—	0.019	—	—	—	0.006	—	—	Minor hyper*	—
AlOH	11 _{17/2} → 10 _{15/2}	346.1591	83	3.38	-0.3	0.027	0.119	—	—	0.006	—	247	Hyper	Peak offset E
AlOH	11 _{19/2} → 10 _{19/2}	346.1591	83	—	—	0.018	—	—	—	0.006	—	—	Minor hyper*	—
SO ₂	34 _{3,31} → 34 _{2,32} ($\nu_2 = 1$)	346.3653	1311	23.01	0.0	0.176	2.667	16.25	0.0	0.218	2.172	541	Low blend	—
SO ₂	19 _{1,19} → 18 _{0,18} ($\nu_2 = 1$)	346.3792	897	18.86	0.0	0.205	2.429	17.17	0.0	0.195	1.899	647	High blend	—
SO ₂	16 _{4,12} → 16 _{3,13}	346.5239	148	28.74	0.0	3.563	39.935	23.67	0.0	13.787	136.955	2320	Low blend	Resolved
SO	8 _y → 7 _x	346.5285	62	34.28	0.0	3.563	40.654	39.35	0.0	13.787	138.906	3520	High blend	out-Irregular Resolved
SO ₂	18 _{4,14} → 18 _{3,15} ($\nu_2 = 1$)	346.5918	926	17.74	0.0	0.137	1.350	10.98	0.0	0.184	1.250	388	Single	out-Arc NW
SO ₂	19 _{1,19} → 18 _{0,18}	346.6522	152	31.25	-5.2	2.470	24.682	31.25	-5.2	5.940	53.580	3040	Single except uncert. blend	Resolved
SiO	8 → 7 ($\nu = 0$)	347.3306	58	46.80	4.8	13.138	134.552	45.52	4.3	69.432	583.589	7360	Single	out-Arc NW Resolved
³⁴ SO ₂	28 _{2,26} → 28 _{1,27}	347.4830	374	10.95	-1.4	0.052	0.329	10.95	-1.4	0.111	0.578	764	Single	out Central absorption
TiO ₂	24 _{2,22} → 23 _{3,21}	347.7881	208	5.89	-2.5	0.030	0.148	9.26	-0.8	0.075	0.407	211	Single	Irregular Peak offset SE
SO ₂	57 _{6,52} → 56 _{7,49}	347.8292	1601	18.69	0.0	0.067	0.651	0.17	0.0	0.072	0.348	470	Low blend	—
SO ₂	87 _{9,79} → 88 _{6,82}	347.8308	3722	12.22	0.0	(0.067)	—	12.22	0.0	(0.028)	—	400	Minor high blend	Compact
SO ₂	13 _{2,12} → 12 _{1,11} ($\nu_2 = 1$)	347.9919	822	15.99	-1.3	0.081	0.741	17.67	-6.4	0.073	0.639	564	Single	—
TiO	11 → 10 ($\nu^3\Delta_1$)	348.1598	82	20.18	-0.6	0.212	2.169	18.50	-5.7	0.235	2.087	388	Single	—

Table A.2. continued.

(1) Molecule	(2) Quantum numbers	(3) ν_{rest} [GHz]	(4) E_{low} [K]	(5) Velocity ^a width [km s ⁻¹]	(6) Velocity ^a asymmetry [km s ⁻¹]	(7) Peak ^b flux [Jy]	(8) Integrated ^b flux [Jy km s ⁻¹]	(9) Velocity ^a width [km s ⁻¹]	(10) Velocity ^a asymmetry [km s ⁻¹]	(11) Peak ^b flux [Jy]	(12) Integrated ^b flux [Jy km s ⁻¹]	(13) Angular ^a width [mas]	(14) Comment ^c line identification	(15) Comment ^d mom0 map
Aperture 320 mas														
Aperture 800 mas														
SO ₂	24 _{2,22} → 23 _{3,21}	348.3878	276	25.33	0.0	0.824	8.412	25.33	0.0	1.639	15.028	2320	Low blend	Resolved out-Arc NW
TiO ₂	56 _{1,244} → 55 _{13,43}	348.4019	1313	22.68	0.0	(0.086)	–	9.23	0.0	(0.090)	–	635	Minor high blend	Peak offset SE
SO ₂	77 _{19,59} → 78 _{18,60}	349.1917	3619	6.71	-1.7	0.032	0.152	4.19	0.7	0.037	0.159	282	Single, uncert.	–
SO ₂	31 _{10,22} → 32 _{9,23}	349.2271	684	18.44	1.9	0.170	1.476	15.09	1.9	0.211	1.544	423	Single	–
AlCl	24 → 23	349.4443	193	3.35	2.6	0.021	0.113	9.22	-1.5	0.058	0.326	623	Hyper	Irregular
SO ₂	46 _{5,41} → 46 _{4,42}	349.7833	1055	23.30	0.5	0.723	7.475	25.11	2.8	0.784	7.766	800	Single	–
SO ₂	55 _{6,50} → 54 _{7,47}	350.1103	1496	13.38	-4.1	0.085	0.623	10.03	-4.1	0.128	0.609	423	Single, uncert.	Compact
SO ₂	26 _{0,26} → 25 _{1,25}	350.3989	214	9.19	-3.3	0.056	0.362	15.04	2.5	0.133	0.870	647	Single	Irregular
SO ₁₈ O	63 _{8,56} → 62 _{9,55}	350.4755	1896	13.37	6.6	(0.059)	–	10.02	6.6	(0.065)	–	423	Uncertain	Extension SE
TiO ₂	25 _{2,24} → 24 _{1,23}	350.7079	212	9.18	-2.6	0.048	0.341	10.02	-3.4	0.121	0.635	588	Single	Irregular
SO ₂	10 _{6,4} → 11 _{5,7}	350.8628	122	15.02	-2.4	0.114	0.961	16.69	-5.8	0.215	1.636	941	Single, uncert.	Irregular
SO ₂	5 _{3,3} → 4 _{2,2}	351.2572	19	20.61	0.0	0.580	5.655	18.94	0.0	1.809	15.801	4480	Low blend	Resolved out-Irregular-Arc
SO ₂	36 _{5,31} → 36 _{4,32} ($\nu_2 = 1$)	351.2900	1408	18.42	0.0	0.194	1.906	16.76	0.0	0.240	1.989	411	High blend	Compact
TiO ₂	36 _{9,27} → 36 _{8,28}	351.6040	560	29.14	19.9	(0.070)	–	13.32	4.1	(0.088)	–	388	Uncertain	Compact
SO ₁₇ O	35 _{5,30} → 35 _{4,31}	351.7014	610	7.49	2.8	(0.030)	–	2.50	-2.1	(0.029)	–	447	Single, uncert.	Irregular
SO ₂	14 _{4,10} → 14 _{3,11}	351.8739	119	32.45	-6.1	1.011	10.079	29.95	-8.6	2.654	22.564	4720	Single	Resolved out-Irregular-Arc
SO ₂	16 _{7,9} → 17 _{6,12} ($\nu_2 = 1$)	351.9824	976	5.82	-3.1	0.037	0.187	–	–	–	–	317	Single, uncert.	Peak slightly offset SE
TiO	11 → 10 ($\nu_2 = 1$)	352.1576	222	14.96	0.0	0.184	1.751	19.95	1.7	0.225	2.195	376	Single	–
SO ₂	36 _{1,25} → 37 _{10,28}	352.6390	892	15.77	-4.2	0.139	1.209	10.79	-4.2	0.147	1.053	552	Single	–
TiO ₂	22 _{16,6} → 23 _{15,9}	353.1129	447	–	–	(0.024)	–	–	–	(0.009)	–	–	Negligible blend*	–
²⁹ Si ¹⁸ O	9 → 8 ($\nu = 2$)	353.4415	3443	10.77	5.2	(0.045)	–	2.48	3.5	(0.063)	–	364	Uncertain	–
³⁰ Si ¹⁸ O	9 → 8 ($\nu = 0$)	353.6487	68	14.07	0.5	0.123	1.042	15.73	0.5	0.255	2.233	658	Single	Irregular
³⁴ SO ₂	40 _{4,36} → 40 _{3,37}	353.9499	790	7.44	1.1	0.051	0.303	7.44	1.1	0.082	0.416	400	Single	Faint scatter
³⁴ SO ₂	34 _{3,31} → 34 _{2,32}	354.2776	564	14.05	-2.8	0.070	0.562	10.74	-1.2	0.097	0.739	341	Single	–
HCN	4 ₁ → 3 ₋₁ ($\nu_2 = 1$)	354.4605	1050	18.17	-3.2	0.143	1.508	17.35	4.1	0.232	1.793	447	Single	–
TiO ₂	19 _{15,5} → 20 _{14,6}	354.4978	368	–	–	(0.605)	–	–	–	(1.726)	–	–	Negligible blend*	–
HCN	4 → 3	354.5055	26	23.12	-1.4	4.193	32.599	23.95	-5.6	21.668	193.346	5920	Single except negl. blend	Resolved out-Central absorption
SO ₂	46 _{5,41} → 46 _{4,42} ($\nu_2 = 1$)	354.6242	1801	21.47	-3.8	0.144	1.518	19.81	4.3	0.175	1.711	388	Single	Compact
SO ₂	16 _{4,12} → 16 _{3,13} ($\nu_2 = 1$)	354.8000	894	15.93	0.0	(0.267)	–	15.93	0.0	(0.283)	–	435	Minor low blend	–
H ₂ O	17 _{4,13} → 16 _{7,10} ($\nu_2 = 0$)	354.8086	5766	20.70	0.0	0.427	4.932	22.35	0.0	0.458	5.307	376	High blend	Compact
SO ₂	12 _{4,8} → 12 _{3,9}	355.0455	94	21.49	0.0	1.238	11.781	21.49	0.0	2.774	24.397	3280	Low blend	Resolved
TiO	11 → 10 ($\nu_2 = 1$)	355.6233	369	18.50	-0.5	0.213	2.343	23.05	-3.8	0.270	2.554	400	Single	out-Arc NW
SO ₂	41 _{12,30} → 42 _{11,31}	355.7055	1127	16.46	-1.9	0.097	0.859	10.70	-6.0	0.143	0.785	529	Single, uncert.	Compact
Si ¹⁸ O	9 → 8 ($\nu = 3$)	355.8093	5141	10.04	0.0	0.043	0.279	1.81	0.0	0.097	0.320	247	Low blend	Compact
²⁹ Si ¹⁸ O	9 → 8 ($\nu = 1$)	355.8229	1764	3.25	0.0	(0.028)	–	1.61	0.0	(0.065)	–	247	Minor high blend	–
SO ₂	15 _{7,9} → 16 _{6,10}	356.0406	213	16.45	-3.4	0.192	1.627	15.62	-2.5	0.272	2.122	1070	Single	Irregular
³⁴ SO ₂	25 _{3,23} → 25 _{2,24}	356.2224	303	9.04	-2.3	0.059	0.375	9.04	-2.3	0.130	0.736	670	Single	Irregular
HCN	4 ₋₁ → 3 ₋₁ ($\nu_2 = 1$)	356.2556	1050	13.97	0.9	0.073	0.698	12.33	0.9	0.127	0.922	635	Single	Resolved out-Irregular-Arc

Table A.2. continued.

(1) Molecule	(2) Quantum numbers	(3) ν_{rest} [GHz]	(4) E_{low} [K]	(5) Velocity ^a width [km s ⁻¹]	(6) Velocity ^a asymmetry [km s ⁻¹]	(7) Peak ^b flux [Jy]	(8) Integrated ^b flux [Jy km s ⁻¹]	(9) Velocity ^a width [km s ⁻¹]	(10) Velocity ^a asymmetry [km s ⁻¹]	(11) Peak ^b flux [Jy]	(12) Integrated ^b flux [Jy km s ⁻¹]	(13) Angular ^d width [mas]	(14) Comment ^c line identification	(15) Comment ^d mom0 map
				Aperture 320 mas				Aperture 800 mas						
SO ₂	10 _{4,6} → 10 _{3,7}	356.7552	73	22.98	-0.6	0.836	7.887	28.72	-4.7	2.382	20.294	3280	Single	Resolved out-Arc NW-Central abs
SO ₂	5 _{3,3} → 4 _{2,2} ($\nu_2 = 1$)	357.0872	765	5.87	0.0	(0.057)	—	0.95	0.0	(0.020)	—	388	Minor low blend	Irregular
³⁴ SO ₂	20 _{0,20} → 19 _{1,19}	357.1022	167	16.50	0.0	0.150	1.645	14.86	0.0	0.396	3.266	1023	High blend	Irregular
SO ₂	13 _{4,10} → 13 _{3,11}	357.1654	106	27.29	0.0	1.005	10.052	19.10	0.0	2.658	22.598	3280	Low blend	Resolved out-Arc NW
SO ₂	15 _{4,12} → 15 _{3,13}	357.2412	133	29.50	-4.4	1.108	10.797	25.41	-6.9	2.553	22.436	3280	Single	Resolved out-Arc NW
SO ₂	11 _{4,8} → 11 _{3,9}	357.3876	83	29.49	-6.2	0.849	8.270	27.03	-8.7	2.297	20.169	3280	Single	Resolved out-Arc NW
³⁴ SO ₂	32 _{5,27} → 32 _{4,28}	357.4977	530	10.65	-2.6	0.079	0.614	4.91	-5.0	0.160	0.536	494	Single	Irregular out-Arc NW
SO ₂	8 _{4,4} → 8 _{3,5}	357.5814	55	32.10	0.0	0.789	8.950	32.10	0.0	1.917	19.012	3040	Low blend	Resolved out-Arc NW
SO ₂	20 _{0,20} → 19 _{1,19} ($\nu_2 = 1$)	357.6026	913	17.50	0.0	0.287	3.137	15.87	0.0	0.355	3.498	411	High blend	Resolved out-Arc NW
SO ₂	9 _{4,6} → 9 _{3,7}	357.6718	63	29.47	-7.9	0.775	7.618	27.83	-7.9	2.076	18.820	3280	Single	Compact Resolved out-Arc NW
SO ₂	7 _{4,4} → 7 _{3,5}	357.8924	48	27.00	-5.6	0.790	7.463	24.54	-9.7	1.930	16.172	3040	Single	Resolved out-Arc NW
SO ₂	6 _{4,2} → 6 _{3,3}	357.9260	41	26.99	-6.6	0.508	4.970	19.63	-2.5	1.295	11.612	1647	Single	Resolved out-Arc NW Irregular-Extension SE
SO ₂	17 _{4,14} → 17 _{3,15}	357.9629	163	27.81	-6.1	1.384	13.343	27.81	-6.1	2.980	25.452	2800	Single	Resolved out-Arc NW
SO ₂	5 _{4,2} → 5 _{3,3}	358.0131	36	17.99	-0.6	0.338	3.103	17.99	-0.6	0.909	7.568	2800	Single	Resolved out-Extension SE
SO ₂	4 _{4,0} → 4 _{3,1}	358.0381	31	25.35	-5.3	0.200	2.173	17.17	2.8	0.525	4.940	1294	Single	Arc NW-Extension SE
²⁹ Si ¹⁸ O	9 → 8 ($\nu = 0$)	358.2065	69	—	—	(0.424)	—	—	—	(0.615)	—	—	Negligible blend*	—
SO ₂	20 _{0,20} → 19 _{1,19}	358.2156	168	29.39	0.0	2.242	25.165	26.12	0.0	7.046	64.854	4000	Low blend	Resolved out-Arc NW
Si ¹⁸ O	9 → 8 ($\nu = 2$)	358.2375	3466	17.32	0.0	(0.102)	—	5.88	0.0	(0.171)	—	705	Minor high blend	Irregular
SO ₂	7 _{7,70} → 7 _{8,73}	358.3454	2918	6.35	0.0	(0.069)	—	7.98	0.0	(0.095)	—	305	Single	—
SO ₂	46 _{13,33} → 47 _{12,36}	358.4419	1390	14.00	-1.0	0.089	0.861	4.90	-3.7	0.102	0.272	400	Single	Irregular
³⁴ SO ₂	15 _{2,14} → 14 _{1,13}	358.9880	102	9.79	-0.9	(0.065)	—	9.79	-0.9	(0.143)	—	647	Single, uncert.	Irregular
SO ₂	25 _{3,23} → 25 _{2,24}	359.1512	304	28.53	-4.8	1.190	11.306	22.01	-6.4	2.173	18.937	2080	Single	Resolved out-Arc NW
SO ₂	19 _{4,16} → 19 _{3,17}	359.7707	197	30.92	-3.4	1.416	13.905	26.86	-7.5	2.747	24.144	2080	Single	Resolved out-Arc NW
SO ₂	14 _{4,10} → 14 _{3,11} ($\nu_2 = 1$)	360.1331	865	13.82	-0.9	0.122	1.041	13.82	0.7	0.119	1.025	494	Single	—
SO ₂	34 _{5,29} → 34 _{4,30}	360.2904	595	22.75	-0.0	1.097	10.308	20.32	-0.8	1.270	11.466	1317	Single	Irregular
Si ¹⁸ O	9 → 8 ($\nu = 1$)	360.6680	1776	19.48	-2.2	0.220	2.288	15.42	0.2	0.251	2.006	376	Single	Compact
SO ₂	20 _{8,12} → 21 _{7,15}	360.7218	333	13.80	-1.2	0.181	1.511	11.36	-0.4	0.205	1.283	611	Single	—
SO ₂	51 _{14,38} → 52 _{13,39}	360.8592	1680	8.92	-0.1	0.071	0.457	—	—	—	—	635	Single, uncert.	—
SO ₂	33 _{2,31} → 34 _{1,34}	361.5113	502	6.48	-1.4	0.079	0.343	—	—	0.019	—	341	Single, uncert.	Irregular
SO ₁₇ O	26 _{3,24} → 26 _{2,25}	361.9885	318	13.31	0.8	0.067	0.590	1.62	14.1	0.102	0.390	305	Single, uncert.	Irregular