Supplementary Tables for:

Microwave rotational spectroscopic investigation of the Ar_2-NH_3 van der Waals trimer

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Table S1. Measured transition frequencies (MHz) for the $\Sigma 0_0$ states of Ar_2-ND_3.

		$\Sigma 0_{0s}$		$\Sigma 0_{0a}$	
$J'_{Ka'Kc'}$-$J''_{Ka''Kc''}$	F'-F''	ν_{obs}	$\Delta\nu$[a]	ν_{obs}	$\Delta\nu$[a]
1_{11}-0_{00}	0-1	3924.8156	3.2	3924.6454	0.0
	1-1	3925.0499	-0.8	3924.8848	-0.3
	2-1	3925.2079	-1.6		
2_{02}-1_{11}	1-1	4274.2520	0.2		
	3-2	4274.4876	-1.4	4274.6154	-7.2
	1-0	4274.6514	2.5	4274.7839	-0.5
2_{20}-1_{11}	2-1	10511.8436	-2.4	10511.3960	5.8
	3-2	10512.1512	5.4	10511.6917	1.5
	1-0	10512.4574	-5.0		
3_{13}-2_{02}	2-2	7978.1250	-3.2		
	4-3	7978.3692	3.2		
	3-2	7978.4994	-2.0		
	3-3	7978.6466	4.2		
3_{22}-2_{11}	2-1	11772.2932	1.3	11771.7956	-2.8
	4-3	11772.3849	-1.5	11771.8928	-0.7
	3-2	11772.5560	-0.6	11772.0617	-3.1
3_{31}-2_{20}	2-1	15565.2613	-1.0		
	4-3	15565.3061	0.4	15564.4840	5.5
	3-2	15565.3462	-0.6	15564.5231	3.0
3_{22}-3_{13}	3-3	6456.7303	-1.5	6456.2727	-2.8
	4-4	6457.0084	0.2	6456.5506	-1.1
	2-2	6457.1064	1.4		
3_{31}-3_{22}	3-3	7367.4910	2.6	7366.6867	-4.3
	4-4	7367.5923	4.0	7366.7882	-1.4
	2-2	7367.6181	-5.2	7366.8218	-2.3
4_{04}-3_{13}	5-4	9445.9757	3.6		
	4-3	9445.9922	-1.7		
4_{13}-3_{22}	4-3	9420.3263	-5.4	9420.7547	-3.3
	5-4	9420.3857	-3.2	9420.8156	-0.8
	3-2	9420.4104	6.7	9420.8347	3.3
4_{13}-4_{04}	4-4	6431.0706	1.1		
	5-5	6431.4254	0.4		
	3-3	6431.5168	0.4		

[a] $\Delta\nu=\nu_{obs}-\nu_{calc}$ in kHz.

Table S2. Measured transition frequencies (MHz) for the $\Sigma 0_0$ states of Ar_2-ND_2H.

		$\Sigma 0_{00s}$		$\Sigma 0_{00a}$	
$J'_{Ka'Kc'}$-$J''_{Ka''Kc''}$	F'-F''	ν_{obs}	$\Delta\nu$[a]	ν_{obs}	$\Delta\nu$[a]
1_{11}-0_{00}	0-1	4058.3565	-3.7	4058.4065	3.1
	1-1	4058.5618	0.0	4058.5979	-3.7
	2-1	4058.6973	1.2		
2_{02}-1_{11}	1-1	4213.2817	2.9		
	3-2	4213.4810	9.0		
	1-0	4213.6054	-9.4	4213.7363	-2.1
2_{20}-1_{11}	2-1	10841.9966	-2.8	10842.0274	3.8
	3-2	10842.2444	4.9	10842.2633	0.5
	1-0	10842.4974	-2.5	10842.5213	0.9
3_{13}-2_{02}	2-2	8170.9195	-2.1	8171.1173	-4.7
	4-3	8171.1061	0.7	8171.3062	-0.8
	3-2	8171.2239	1.4	8171.4222	-0.5
3_{22}-2_{11}	2-1	12172.5560	-4.3		
	4-3	12172.6408	0.6	12172.7638	-0.1
	3-2	12172.7900	5.8	12172.9094	4.0
3_{31}-2_{20}	3-3	16172.3459	-4.1		
	4-3	16172.4244	0.9	16172.4866	2.3
	3-2	16172.4566	0.9	16172.5145	-0.9
	2-2	16172.5549	-0.2		
3_{22}-3_{13}	3-3			6727.4650	-3.8
	4-4	6727.8287	-1.6	6727.6867	-4.8
	3-4	6727.8287	-1.6	6727.6867	-4.8
	3-2	6727.9071	-1.2	6727.7730	3.6
	2-2	6727.9071	-1.2	6727.7730	3.6
3_{31}-3_{22}	3-3	7902.1891	7.2	7902.0786	5.7
	4-4	7902.2578	2.3	7902.1497	0.8
	2-2	7902.2737	-7.5	7902.1668	-8.6
4_{04}-3_{13}	5-4	9528.4508	-3.4	9528.7198	-0.2
	4-3	9528.4731	6.5	9528.7328	0.1
4_{13}-3_{22}	4-3	9178.7429	-1.0	9178.9411	-1.0
	5-4	9178.8028	-2.2	9179.0020	1.2
4_{13}-4_{04}	4-4	6377.8864	1.7	6377.6782	0.0
	5-5	6378.1817	0.6	6377.9712	-1.0
	3-3	6378.2581	0.8	6378.0487	0.9

[a] $\Delta\nu=\nu_{obs}-\nu_{calc}$ in kHz.

Table S3. Measured transition frequencies (MHz) for the $\Sigma 0_{00}$ states of Ar_2-NDH_2.

		$\Sigma 0_{00s}$		$\Sigma 0_{00a}$	
$J'_{Ka'Kc'}$-$J''_{Ka''Kc''}$	F'-F''	ν_{obs}	$\Delta\nu$[a]	ν_{obs}	$\Delta\nu$[a]
1_{11}-0_{00}	0-1	4204.7140	-1.6	4205.4309	0.8
	1-1	4204.8812	3.0	4205.5932	0.0
	2-1	4204.9916	5.0	4205.7014	-0.6
2_{02}-1_{11}	1-1			4139.6740	-2.2
	2-1			4139.7971	3.1
	3-2			4139.8255	-1.5
	2-2	4140.0308	-5.1	4139.9037	1.0
	1-0	4140.0773	-3.3	4139.9469	-1.2
2_{20}-1_{11}	2-1	11208.9382	-2.6	11210.6354	0.2
	3-2	11209.1272	2.2	11210.8209	0.1
	1-0	11209.3335	3.7	11211.0241	-0.1
3_{13}-2_{02}	2-2	8381.3033	-3.2	8382.3928	1.1
	4-3	8381.4037	0.5	8382.5248	-3.0
	3-2	8381.1710	0.7	8382.6260	1.2
3_{22}-2_{11}	2-1	12611.3780	-0.4	12613.5227	-1.3
	4-3	12611.3780	-0.4	12613.5227	-1.3
	3-2	12611.4998	5.2	12613.6418	1.3
	2-2	12611.4998	5.2	12613.6418	1.3
3_{31}-2_{20}	4-3	16839.1205	-7.7	16842.1934	-2.7
	3-2	16839.1582	6.2	16842.2234	3.4
3_{22}-3_{13}	3-3	7030.6489	2.3	7031.8365	0.9
	4-3	7030.6489	2.3	7031.8365	0.9
	2-3	7030.6489	2.3	7031.8365	0.9
	4-4	7030.8242	5.1	7032.0097	1.4
	3-4	7030.8242	5.1	7032.0097	1.4
	3-2	7030.8687	-10.8	7032.0620	-6.7
	2-2	7030.8687	-10.8	7032.0620	-6.7
3_{31}-3_{22}	3-4	8496.1192	3.7	8496.5991	-1.7
	3-3	8496.1192	3.7	8496.5991	-1.7
	3-2	8496.1192	3.7	8496.5991	-1.7
	4-4	8496.1667	-0.9	8496.6536	1.0
	4-3	8496.1667	-0.9	8496.6536	1.0
4_{04}-3_{13}	5-4	9602.1202	0.0	9602.9037	3.7
4_{13}-3_{22}	4-3	8889.8454	3.1	8888.9066	-3.7
	5-4	8889.8976	-3.1	8888.9691	0.0
4_{13}-4_{04}	4-4			6317.8430	1.8
	5-5	6318.5997	0.0	6318.0768	-0.6
	3-3			6318.1424	4.3

[a] $\Delta\nu=\nu_{obs}-\nu_{calc}$ in kHz.