

SUPPLEMENTARY ONLINE MATERIAL

Table 1: The wavenumbers (in cm^{-1}) of the 0-0, 1-1 and 1-2 bands of the $C^1\Sigma^+ - X^1\Sigma^+$ system of AlH.

J	$R_{11ee}(J)$	$o - c^a$	$P_{11ee}(J)$	$o - c^a$	$R_{11ee}(J)$	$o - c^b$	$P_{11ee}(J)$	$o - c^b$
0 - 0 band								
0	44610.482	0.000			44610.482	-0.002		
1	44623.427	0.001	44585.107	0.000	44623.427	0.002	44585.107	-0.002
2	44636.510	0.001	44572.692	0.000	44636.510	0.003	44572.692	-0.001
3	44649.712	0.002	44560.469	-0.001	44649.712	-0.006	44560.469	0.003
4	44663.031	0.002	44548.432	-0.001	44663.031	0.004	44548.432	0.002
5	44676.414	0.001	44536.572	-0.002	44676.414	0.004	44536.572	-0.009
6	44689.836	0.002	44524.908	-0.002	44689.836	0.004	44524.908	-0.002
7	44703.264	0.006	44513.408	-0.001	44703.264	0.009	44513.408	0.002
8	44716.630	0.002	44502.056	-0.002	44716.630	-0.004	44502.056	-0.001
9	44729.917	0.001	44490.832	-0.006	44729.917	-0.006	44490.832	-0.004
10	44743.072	0.003	44479.711	-0.003	44743.072	0.005	44479.711	-0.009
11	44756.027	0.002	44468.668	-0.001	44756.027	0.021	44468.668	-0.008
12	44768.676	0.003	44457.667	-0.003	44768.676	0.003	44457.667	-0.002
13	44780.988	0.004	44446.668	-0.002	44780.988	-0.003	44446.668	0.017
14	44792.877	0.005	44435.570	-0.003	44792.877	0.002	44435.570	-0.005
15	44804.224	0.008	44424.365	-0.004	44804.224	-0.006	44424.365	-0.011
16	44814.972	0.012	44412.980	-0.005	44814.972	0.025	44412.980	-0.009
17	44824.887	0.000	44401.308	-0.008	44824.887	-0.017	44401.308	-0.022
18	44833.975	0.000	44389.309	-0.012	44833.975	0.014	44389.309	0.003
19	44841.833	0.004	* 44376.838	0.025	# 44841.833	-0.128	* 44376.838	0.025
20	44848.727	0.009	44363.736	0.000	44848.727	0.004	44363.736	0.014
21	44854.325	0.000	44349.754	-0.004	# 44854.325	0.284	# 44349.754	-0.136
22	44855.604	0.012	44335.136	-0.009	# 44855.604	-2.075	44335.136	-0.014
23	* 44858.500	0.063	* 44319.645	0.052	# 44858.500	-0.867	# 44319.645	0.336
24	* 44857.900	-0.041	44300.046	-0.012	# 44857.900	-0.896	# 44300.046	-2.099
25	44855.001	0.002	44282.471	0.000	# 44855.001	-0.611	# 44282.471	-0.930
26	44849.370	-0.005	44261.923	0.000	# 44849.370	-0.038	# 44261.923	-0.855
27	44839.714	-0.008	44239.321	-0.002	44839.714	-0.008	# 44239.321	-0.614
28			44214.450	0.005			# 44214.450	-0.028
29			44185.961	0.008			44185.961	0.008
1 - 1 band								
0	44308.627	-0.001			44308.627	-0.004		
1	* 44319.645	-0.037	44284.744	0.000	* 44319.645	-0.037	44284.744	0.004
2	44330.083	-0.002	44271.938	0.001	44330.083	-0.002	44271.938	-0.002
3	44339.770	0.000	44258.559	0.000	44339.770	-0.001	44258.559	-0.001
4	44348.030	-0.015	44244.576	0.002	# 44348.030	-0.627	44244.576	0.004
5	44361.851	-0.003	44229.930	0.000	# 44361.851	5.210	44229.930	-0.001
6	44366.513	-0.001	44213.968	0.015	# 44366.513	2.912	# 44213.968	-0.597
7	44372.583	-0.011	44203.608	0.003	# 44372.583	3.186	# 44203.608	5.216
8	* 44376.838	-0.102	44184.219	0.001	# 44376.838	2.970	# 44184.219	2.913
9			44166.390	0.011			# 44166.390	3.207
10			44146.951	0.000			# 44146.951	3.071
1 - 2 band								
0	42739.514	0.000			42739.514	0.023		
1	42750.918	0.009	42715.940	0.000	42750.918	0.016	42715.940	-0.022
2	42762.007	-0.006			42762.007	-0.016		
3	42772.804	0.007	42691.575	-0.009	42772.804	0.010	42691.575	-0.003
4	42782.505	0.008	42679.023	0.006	# 42782.505	-0.627	42679.023	-0.005
5	42798.102	-0.003	42666.183	-0.007	# 42798.102	5.163	42666.183	-0.004
6	42804.914	0.000	42652.345	-0.008	# 42804.914	2.815	# 42652.345	-0.644
7			42644.521	0.003			# 42644.521	5.169
8	42820.694	-0.011	42627.992	0.000	# 42820.694	2.777	# 42627.992	2.815
9			42613.267	0.000			# 42613.267	2.922
10			42597.517	0.011			# 42597.517	2.799

The columns labelled $o - c$ show observed minus calculated values of Curl-Dane-Watson method fit (^a) and Hamiltonian fit (^b).
* Indicates low accuracy lines not included in the fit.
Indicates perturbed lines not included in the Hamiltonian fit.