

SMS Reflectivity measurements of WHT M1 before and after CO2 cleaning, 17 Dec 2012
Measurements are usually in pairs to confirm repeatability. 'Solo' & '3rd' omitted from avg
partial averages from nearby measmts, to confirm unusual values, shown in "user comment"

Lambda	0.67 micron		
Incident Angle	25 deg		<--SMS Summary characteristics
BW Limits	1	0.01	

First, measurements before CO2 cleaning

datum #	Scattering at angles Θ, Φ			Reflectivity	user comment	Roughness RMS(Å)	TIME	DATE
	$\Theta_s \rightarrow$	$\Phi_s \rightarrow$						
1	location 1	5.36E-03	1.13E-03	0.837		60.7	"14:56:37"	"12-17-1912"
2		5.39E-03	1.13E-03	0.839		60.9	"14:56:42"	"12-17-1912"
3	2	4.59E-03	1.14E-03	0.827		54.4	"14:56:53"	"12-17-1912"
4		4.63E-03	1.15E-03	0.828		54.6	"14:56:58"	"12-17-1912"
5	3	4.00E-03	1.19E-03	0.835		48.9	"14:57:10"	"12-17-1912"
6		4.00E-03	1.18E-03	0.837		48.9	"14:57:15"	"12-17-1912"
7	4	3.81E-03	8.51E-04	0.853		49.9	"14:57:27"	"12-17-1912"
8		3.81E-03	8.54E-04	0.851		49.9	"14:57:32"	"12-17-1912"
9	5	7.99E-03	2.59E-03	0.834		68.3	"14:57:44"	"12-17-1912"
10		8.02E-03	2.59E-03	0.834		68.4	"14:57:49"	"12-17-1912"
11	6	3.99E-03	1.52E-03	0.843		47.1	"14:58:46"	"12-17-1912"
12		3.98E-03	1.52E-03	0.841		47.1	"14:58:53"	"12-17-1912"
13		3.97E-03	1.51E-03	0.842	3rd	47	"14:59:00"	"12-17-1912"
14	7	3.16E-03	9.31E-04	0.847		43.2	"14:59:10"	"12-17-1912"
15		3.17E-03	9.33E-04	0.848		43.3	"14:59:15"	"12-17-1912"
16	8	6.18E-03	3.94E-03	0.834		57.2	"14:59:29"	"12-17-1912"
17		6.19E-03	3.93E-03	0.835		57.3	"14:59:34"	"12-17-1912"
18	9	5.54E-03	1.57E-03	0.847		57.5	"15:00:40"	"12-17-1912"
19		5.54E-03	1.57E-03	0.848		57.5	"15:00:45"	"12-17-1912"
20	10	6.80E-03	2.53E-03	0.839		61.8	"15:01:01"	"12-17-1912"
21		6.81E-03	2.52E-03	0.839		61.9	"15:01:06"	"12-17-1912"
22	11	5.37E-03	1.92E-03	0.845		55	"15:01:19"	"12-17-1912"
23		5.36E-03	1.92E-03	0.843		55	"15:01:24"	"12-17-1912"
24	12	4.67E-03	1.80E-03	0.839		51	"15:02:39"	"12-17-1912"
25		4.67E-03	1.79E-03	0.841		51	"15:02:44"	"12-17-1912"
26	13	1.17E-02	6.98E-03	0.816		79.9	"15:02:57"	"12-17-1912"
27		1.22E-02	6.97E-03	0.817		81.4	"15:03:02"	"12-17-1912"
28	14	6.32E-03	4.43E-03	0.828		58	"15:03:17"	"12-17-1912"
29		6.30E-03	4.42E-03	0.829		57.9	"15:03:21"	"12-17-1912"
30	15	5.28E-03	1.65E-03	0.812		56.5	"15:03:33"	"12-17-1912"
31		5.27E-03	1.65E-03	0.813		56.4	"15:03:39"	"12-17-1912"
32		5.25E-03	1.62E-03	0.812	3rd	56.4	"15:04:14"	"12-17-1912"
33	16	4.56E-03	1.51E-03	0.808	solo	52.2	"15:04:28"	"12-17-1912"
average		5.67E-03	2.28E-03	0.836		56.7		
std dev				0.011				

std err

0.003

34	ref	4.88E-03	3.08E-03	0.932	48.2	"15:08:49"	"12-17-1912"
35		4.90E-03	3.12E-03	0.933	48.2	"15:08:54"	"12-17-1912"
36		7.18E-03	3.59E-03	0.93	58.9	"15:09:01"	"12-17-1912"
37		7.22E-03	3.65E-03	0.931	59.1	"15:09:05"	"12-17-1912"
38		1.31E-02	2.23E-03	0.933	95.9	"15:09:12"	"12-17-1912"
39		2.16E-03	9.81E-04	0.939	32.4	"15:27:58"	"12-17-1912"
40		2.18E-03	9.89E-04	0.939	32.5	"15:28:03"	"12-17-1912"
41		1.41E-02	2.31E-03	0.926	101.3	"15:28:34"	"12-17-1912"
42		1.42E-02	2.34E-03	0.926	101.5	"15:28:39"	"12-17-1912"
43		3.78E-03	1.30E-03	0.94	43.9	"15:28:48"	"12-17-1912"
44		3.80E-03	1.31E-03	0.94	44	"15:28:53"	"12-17-1912"
45		6.16E-03	3.68E-03	0.917	54.6	"15:29:00"	"12-17-1912"
46		6.17E-03	3.69E-03	0.917	54.6	"15:29:06"	"12-17-1912"
47		3.47E-03	1.38E-03	0.931	41.6	"15:29:31"	"12-17-1912"
48		3.49E-03	1.39E-03	0.93	41.7	"15:29:36"	"12-17-1912"
49		3.32E-03	1.87E-03	0.93	39.9	"15:29:43"	"12-17-1912"
50		3.34E-03	1.87E-03	0.929	40	"15:29:48"	"12-17-1912"
51		4.01E-03	1.94E-03	0.936	44	"15:29:55"	"12-17-1912"

the following day, CO2 cleaning was performed and new measurements taken

52	location 1	4.85E-03	1.05E-03	0.85	56.9	"15:12:26"	"12-18-1912"
53		4.85E-03	1.05E-03	0.849	56.9	"15:12:31"	"12-18-1912"
54	2	5.10E-03	1.13E-03	0.844	58.2	"15:12:41"	"12-18-1912"
55		5.11E-03	1.13E-03	0.844	58.3	"15:12:46"	"12-18-1912"
56	3	4.33E-03	1.09E-03	0.839	52.2	"15:12:58"	"12-18-1912"
57		4.33E-03	1.09E-03	0.841	52.2	"15:13:04"	"12-18-1912"
58	4	4.36E-03	8.80E-04	0.839	55.3	"15:13:17"	"12-18-1912"
59		4.36E-03	8.73E-04	0.84	55.5	"15:13:22"	"12-18-1912"
60	5	4.57E-03	1.05E-03	0.853	54.3	"15:14:28"	"12-18-1912"
61		4.58E-03	1.06E-03	0.853	54.3	"15:14:34"	"12-18-1912"
62	6	4.10E-03	8.85E-04	0.848	52.5	"15:14:43"	"12-18-1912"
63		4.11E-03	8.85E-04	0.848	52.6	"15:14:49"	"12-18-1912"
64	7	3.26E-03	8.14E-04	0.846	45.3	"15:14:59"	"12-18-1912"
65		3.28E-03	8.08E-04	0.847	45.4	"15:15:03"	"12-18-1912"
66	8	3.56E-03	7.43E-04	0.854	49.2	"15:15:23"	"12-18-1912"
67		3.57E-03	7.37E-04	0.854	49.4	"15:15:28"	"12-18-1912"
68	9	5.23E-03	1.67E-03	0.833	55.4	"15:15:44"	"12-18-1912"
69		5.25E-03	1.67E-03	0.835	55.5	"15:15:49"	"12-18-1912"
70	10	3.91E-03	8.75E-04	0.84	50.9	"15:16:03"	"12-18-1912"
71		3.90E-03	8.92E-04	0.841	50.6	"15:16:08"	"12-18-1912"
72	11	4.43E-03	9.83E-04	0.846 skip	54.2	"15:17:28"	"12-18-1912"
73		4.44E-03	9.84E-04	0.841	54.4	"15:17:32"	"12-18-1912"
74		4.45E-03	9.82E-04	0.838	54.6	"15:17:42"	"12-18-1912"
75	12	5.39E-03	1.25E-03	0.832	59.6	"15:17:58"	"12-18-1912"

76		5.40E-03	1.25E-03	0.831		59.7	"15:18:02"	"12-18-1912"
77	13	4.10E-03	8.98E-04	0.834		52.6	"15:18:11"	"12-18-1912"
78		4.10E-03	9.02E-04	0.833		52.6	"15:18:15"	"12-18-1912"
79	14	3.59E-03	6.49E-04	0.814		52.8	"15:18:29"	"12-18-1912"
80		3.60E-03	6.51E-04	0.817		52.7	"15:18:34"	"12-18-1912"
81	15	4.48E-03	9.99E-04	0.809	near	55.7	"15:18:47"	"12-18-1912"
82		4.48E-03	9.94E-04	0.809		55.7	"15:18:53"	"12-18-1912"
83	16	4.72E-03	1.18E-03	0.816	near	55.4	"15:19:04"	"12-18-1912"
84		4.73E-03	1.18E-03	0.815		55.5	"15:19:10"	"12-18-1912"
85	17	5.18E-03	1.15E-03	0.809	near	60	"15:19:19"	"12-18-1912"
86	18	4.94E-03	1.09E-03	0.83	0.8127	57.9	"15:20:27"	"12-18-1912"
87		4.95E-03	1.09E-03	0.831		57.9	"15:20:33"	"12-18-1912"
88	19	4.24E-03	9.31E-04	0.846		53.1	"15:20:56"	"12-18-1912"
89		4.25E-03	9.28E-04	0.846		53.3	"15:21:01"	"12-18-1912"
90	20	5.89E-03	2.75E-03	0.834		56.6	"15:21:13"	"12-18-1912"
91		5.89E-03	2.77E-03	0.834		56.6	"15:21:18"	"12-18-1912"
92	21	3.69E-03	8.07E-04	0.853		49.4	"15:21:31"	"12-18-1912"
93		3.70E-03	8.06E-04	0.853		49.5	"15:21:36"	"12-18-1912"
94	22	4.18E-03	1.21E-03	0.853	near	49.7	"15:21:47"	"12-18-1912"
95	23	3.47E-03	1.02E-03	0.853		45.1	"15:21:57"	"12-18-1912"
96	24	4.61E-03	1.05E-03	0.855	near	54.6	"15:22:10"	"12-18-1912"
97		4.62E-03	1.06E-03	0.854	0.8535	54.6	"15:22:18"	"12-18-1912"
98	25	3.82E-03	9.80E-04	0.837		49	"15:23:31"	"12-18-1912"
99		3.82E-03	9.79E-04	0.839		48.9	"15:23:36"	"12-18-1912"
100	26	5.15E-03	1.25E-03	0.843		57.2	"15:23:50"	"12-18-1912"
101		5.14E-03	1.25E-03	0.842		57.3	"15:23:55"	"12-18-1912"
102	27	3.02E-03	4.14E-04	0.851		53.1	"15:24:11"	"12-18-1912"
103		3.02E-03	4.14E-04	0.851		53	"15:24:16"	"12-18-1912"
104	28	3.25E-03	6.66E-04	0.852	near	47.3	"15:24:26"	"12-18-1912"
105	29	3.47E-03	8.11E-04	0.851		47.2	"15:24:37"	"12-18-1912"
106	30	3.36E-03	6.76E-04	0.85	near	48.3	"15:24:48"	"12-18-1912"
107	31	4.78E-03	9.20E-04	0.823	0.8495	59.3	"15:25:05"	"12-18-1912"
108		4.78E-03	9.25E-04	0.823		59.3	"15:25:10"	"12-18-1912"
109	32	5.09E-03	9.11E-04	0.817	solo	62.9	"15:25:25"	"12-18-1912"
110	33	4.05E-03	9.39E-04	0.791	trust	53	"15:26:37"	"12-18-1912"
average		4.35E-03	1.04E-03	0.840		54.2		
std deviation				0.010				
std error				0.002				21 independent samples
111 ref		5.21E-03	1.94E-03	0.934		51.2	"15:31:33"	"12-18-1912"
112		5.24E-03	1.96E-03	0.934		51.3	"15:31:39"	"12-18-1912"
113		2.97E-03	1.22E-03	0.928		38.4	"15:31:54"	"12-18-1912"
114		2.98E-03	1.23E-03	0.928		38.5	"15:31:59"	"12-18-1912"
115		5.97E-03	1.74E-03	0.936		56.6	"15:32:06"	"12-18-1912"
116		5.95E-03	1.73E-03	0.937		56.5	"15:32:13"	"12-18-1912"
117		3.61E-03	1.79E-03	0.941		41.5	"15:32:28"	"12-18-1912"
		4.35E-03	1.03E-03	0.838		53.7	?	?