

WHT primary mirror reflectivity/scattering measurements and CO2 cleaning, 9 March 2016.

Following calima on 2-4 March, M1 was measured in CT7 at 2 locations and dust index found ~2% above averages reported after CO2 cleaning of 15 February. Decided on a new CO2 cleaning, results below.

The Reflectivity has degraded by an estimated 0.2% waveband average since February; R~87.9% at 624 nm.

MEASUREMENTS BEFORE CO2

% Reflectivity per waveband of measurement (nm)

data #	date-time	C#	Location	T/°C	365	404	464	522	624	760	970
681	09/03/2016 11:38	5	WHTM1	22.1	88.7	87.5	87.5	87.6	87.0	84.6	90.5
682	09/03/2016 11:39	5	WHTM1	21.9	88.7	87.3	87.2	87.6	86.9	84.4	90.4

MEASUREMENTS AFTER CO2

683	09/03/2016 12:18	5	WHTM1 L	11.2	89.8	88.6	88.4	88.9	88.3	85.7	92
684	09/03/2016 14:11	5	WHTM1 L	19.6	89.2	88.1	88.2	88.6	88	85.7	91.9
685	09/03/2016 14:12	5	WHTM1 L	19.4	89.4	88.1	88.1	88.6	88	85.4	91.6
686	09/03/2016 14:13	5	WHTM1 t	19.3	88.8	87.6	87.6	88.1	87.6	85	91.3
687	09/03/2016 14:14	5	WHTM1 t	19.2	89.8	88.5	88.6	88.9	88.2	85.7	91.9
688	09/03/2016 14:15	5	WHTM1 t	19.1	88.7	87.4	87.5	88.2	87.6	85.1	91.4
689	09/03/2016 14:15	5	WHTM1 R	18.9	89.9	88.4	88.3	88.5	88.1	85.4	91.6
690	09/03/2016 14:16	5	WHTM1 R	18.8	89.3	87.8	87.8	88.1	87.6	84.8	91.1
691	09/03/2016 14:17	5	WHTM1 R	18.8	88.1	86.2	85.3	87.8	86.1	83.9	91.2
692	09/03/2016 14:18	5	WHTM1 b	18.7	90.1	88.7	88.9	89	88.6	85.9	91.9
693	09/03/2016 14:19	5	WHTM1 b	18.6	90.1	88.8	88.6	89.1	88.4	85.8	92.0
global average					89.4	88.0	87.9	88.5	87.9	85.3	91.6
minimum values					88.1	86.2	85.3	87.8	86.1	83.9	91.1
maximum values					90.1	88.8	88.9	89.1	88.6	85.9	92.0
range					2.0	2.6	3.6	1.3	2.5	2.0	0.9
std deviation					0.6	0.8	1.0	0.4	0.7	0.6	0.3
Fresh Aluminium coating June 2015					93.4	91.7	91.2	91.2	90.2	87.5	93.5
Average shortfall from fresh Aluminium					4.0	3.7	3.3	2.7	2.3	2.2	1.9
Average shortfall over all wavebands					2.9						
Improvement in %R due to CO2					0.7	0.5	0.4	0.9	0.9	0.7	1.1
Average over all wavebands					0.8						

DUST MEASUREMENTS BEFORE CO2

681					7.9	7.4	7.5	5.7	6.5	5.4	5.5
682					8.5	8.3	8.6	6.4	7	6.1	5.9

AFTER CO2

683					7.1	6.6	6.7	4.6	4.8	3.7	3.1
684					8.6	7.9	7.4	5	5.4	3.9	3.5
685					7.8	7.9	7.4	5.3	5.3	4.4	3.9
686					9.2	8.7	8.7	6.2	6.4	5.1	4.5
687					7.7	7.1	6.6	4.8	4.8	3.6	3.4
688					9.5	8.9	8.7	6	6.3	4.8	4.2
689					7.4	7.1	7.1	5.2	5.3	4.4	3.8
690					7.9	8	8	6	6.1	5.3	4.5
691					7.7	7.7	8.2	4.9	5.9	4.7	3.4
692					6.5	5.8	5.3	4	3.8	3	2.9
693					6.7	6.0	6.3	4.1	4.5	3.4	2.8

7.8 7.4 7.3 5.1 5.3 4.2 3.6

Difference before-after

0.7 0.9 1.3 1.3 1.7 1.9 2.3

