

Reflectivity Report for INT Primary Mirror before and after soap & water washing, 22 January 2019

Washing was agreed at Ops meeting, December, to recover reflectivity while waiting for aluminisation following installation of WEAVE CT7 measurements only, at 3 positions before and after washing, resp. Coating quality is highly non-uniform due to scratches and stains, so that a representative sample of the surface would require a very large number of measurements (perhaps 20).

Propanol was used to reduce 40 cm oily streak on right; sponges removed other stains. Improvement estimated at about 5% R, -10% scattering. Accumulated losses of reflectivity up to 3% in blue, but <1% in red. Gains expected from new coating: 2 to 7% (higher in blue, as usual).

				Tempr. °C	Reflectivity (%R) wavelength of band (nm)							"Dust Indices" (DI) (% Scattering)						
					365	404	464	522	624	760	970	365	404	464	522	624	760	970
Before wash																		
1511	22/01/2019 09:46	3	INTM1 all	17.4	85.3	84.3	84.5	84.5	84.0	81.8	87.9	13.7	13.5	13.7	10.9	11.8	10.2	10.4
1512	22/01/2019 09:49	3	INTM1 all	17.4	83.3	82.6	82.3	83.4	82.2	80.3	86.0	15.7	15.0	16.2	12.0	15.2	13.1	13.3
1513	22/01/2019 09:50	3	INTM1 all	17.6	85.0	84.2	84.0	84.7	83.9	81.9	88.4	12.7	12.4	13.6	9.9	11.3	9.9	9.5
average					84.5	83.7	83.6	84.2	83.4	81.3	87.4	14.0	13.6	14.5	10.9	12.8	11.1	11.1
After wash																		
1514	22/01/2019 11:46	3	INTM1 all	12.6	87.7	87.1	87.4	87.9	87.3	85.7	92.2	6.5	5.6	5.2	3.3	3.4	2.2	1.9
1515	22/01/2019 11:49	3	INTM1 all	12.9	85.6	85.1	85.5	87.0	86.4	84.8	91.7	14.9	13.4	12.4	7.6	7.8	5.0	4.5
1516	22/01/2019 11:50	3	INTM1 all	13.1	86.1	85.6	86.1	87.2	87.0	85.0	92.1	9.3	8.8	8.8	5.5	5.5	3.7	2.7
average					86.5	85.9	86.3	87.4	86.9	85.2	92.0	10.2	9.3	8.8	5.5	5.6	3.6	3.0
change					1.9	2.2	2.7	3.2	3.5	3.8	4.6	-3.8	-4.4	-5.7	-5.5	-7.2	-7.4	-8.0
max-min					4.4	4.5	5.1	4.5	5.1	5.4	6.2	-9.2	-9.4	-11.0	-8.7	-11.8	-10.9	-11.4
Reflectivity/DI% loss since last Wash 5/10/17					2.8	2.2	1.9	1.4	1.5	0.7	0.4	-2.8	-2.4	-2.4	-1.1	-1.3	-0.3	-0.2
Shortfall w.r.t. new Aluminium coat					7.0	4.7	3.8	3.3	3.0	2.0	1.6	-5.8	-5.1	-4.8	-3.0	-3.0	-1.9	-1.3