

Report on Reflectivity measurements on WHT Primary and inspection from distance at AP3 and through porthole, 18 Sept 2018

Appearance is quite dusty, with old rain spots all over, as before, but no evidence of new rain or condensation stains.

The change in average values w.r.t. 5 Sept implies a loss of about 0.5% in reflectivity and slightly larger increase in scattering, less than 1%, in 2 weeks.

				Tempr. °C	Reflectivity (%R) wavelength of band (nm)							"Dust Indices" (DI)						
					365	404	464	522	624	760	970	365	404	464	522	624	760	970
1455	18/09/2018 11:28	1 left	20.1	40.9	84.0	83.9	83.9	83.7	81.2	87.0	15.0	14.6	15.0	12.4	13.7	12.2	13.2	
1456	18/09/2018 11:28	1 left	20.1	86.7	85.6	85.4	85.8	85.3	83.2	89.6	13.7	12.9	13.2	10.1	11.0	9.0	8.8	
1457	18/09/2018 11:30	1 left	20.2	85.7	84.6	84.5	85.0	84.1	82.2	88.0	14.0	13.8	14.2	10.9	12.7	10.6	10.9	
1458	18/09/2018 11:31	1 top	20.3	85.7	84.8	84.9	85.4	84.5	83.0	88.8	14.7	13.8	14.0	10.3	12.3	9.3	9.6	
1459	18/09/2018 11:32	1 top	20.3	87.1	85.9	85.7	86.1	85.8	83.6	90.0	13.5	12.9	12.8	9.7	10.1	8.1	7.7	
1460	18/09/2018 11:33	1 top	20.4	85.8	84.7	84.6	84.9	84.4	82.3	88.7	15.9	15.3	15.6	12.1	13.4	10.9	10.3	
1461	18/09/2018 11:34	1 right	20.5	87.7	86.6	86.5	86.7	86.2	83.9	90.2	12.3	11.5	11.2	8.9	9.3	7.7	7.6	
1462	18/09/2018 11:35	1 right	20.6	87.7	86.1	85.7	85.9	85.6	83.0	89.4	12.1	12.0	12.5	9.9	10.5	9.2	8.5	
1463	18/09/2018 11:36	1 right-omit	20.8	85.3	82.6	82.1	82.8	82.9	80.0	86.7	15.2	17.7	18.7	15.4	16.0	15.0	14.5	
1464	18/09/2018 11:37	1 right-rpt	20.9	87.6	86.3	86.1	86.3	85.6	83.4	89.5	11.9	11.3	11.5	9.1	10.1	8.3	8.3	
1465	18/09/2018 11:38	1 bottom	21.0	86.7	85.4	85.1	85.7	85.1	82.8	89.3	13.4	12.9	13.1	10.3	11.0	9.3	9.0	
1466	18/09/2018 11:39	1 bottom	21.1	86.5	86.3	86.5	86.6	85.8	83.9	89.4	13.5	11.7	11.3	8.9	9.7	7.4	8.3	
1467	18/09/2018 11:40	1 bottom	21.3	85.8	84.9	84.8	85.0	84.4	82.4	88.1	14.2	13.4	13.9	11.0	12.3	10.0	10.4	
averages (omit 1463)				86.6	85.4	85.3	85.6	85.0	82.9	89.0	13.6	13.0	13.2	10.3	11.3	9.3	9.4	

Values highlighted in orange were omitted from statistics. 1463 is likely a stain and 1455 instrument not stably positioned. Pale orange: next worst data.

Green highlight indicates optimum measurements: highest reflectivity and lowest scattering

Note repeated measurement 1464 was taken at approximately the same location as the previous one, in an attempt to confirm it.

Change since last inspection, 5 Sept 2018 -0.6 -0.5 -0.4 -0.3 -0.5 -0.3 -0.5 1.1 1.0 0.9 0.4 0.7 0.4 0.6

Some notes on scattering model on next page:

Sum total reflectivity + scattering (Dust Index) is greater than 100% for some measurements, suggesting the scattering is too large for model to describe. According to CT7 manual, this occurs as the scattering value approaches 15%, which is borne out in these measurements.

	Index	365	404	464	522	624	760	970
Sum total %R+%DI	1455	55.9	98.6	98.9	96.3	97.4	93.4	100.2
	1456	100.4	98.5	98.6	95.9	96.3	92.2	98.4
	1457	99.7	98.4	98.7	95.9	96.8	92.8	98.9
	1458	100.4	98.6	98.9	95.7	96.8	92.3	98.4
	1459	100.6	98.8	98.5	95.8	95.9	91.7	97.7
	1460	101.7	100.0	100.2	97.0	97.8	93.2	99.0
	1461	100.0	98.1	97.7	95.6	95.5	91.6	97.8
	1462	99.8	98.1	98.2	95.8	96.1	92.2	97.9
	1463	100.5	100.3	100.8	98.2	98.9	95.0	101.2
	1464	99.5	97.6	97.6	95.4	95.7	91.7	97.8
	1465	100.1	98.3	98.2	96.0	96.1	92.1	98.3
	1466	100.0	98.0	97.8	95.5	95.5	91.3	97.7
	1467	100.0	98.3	98.7	96.0	96.7	92.4	98.5