DOCUMENT

Sediment transport around the Papua region of Indonesia (image courtesy of ESA)

MERIS 81ST CYCLIC REPORT

20th July 2009 – 24th August 2009

prepared by/*préparé par*	MERIS SPPA Team and QWG
reference/*réference*	
issue/*édition*	1
revision/*révision*	0
date of issue/*date d'édition*	7th September, 2009
status/*état*	
Document type/*type de document*	MERIS Cyclic Report
Distribution/*distribution*	

A P P R O V A L

Title *titre*	MERIS Cyclic Report – Cycle #81	issue *issue* 1	revision *revision* 1
author *auteur*	J. Jackson C. Kent	date *date*	07/09/2009
approved by *approuvé by*		date *date*	

C H A N G E L O G

reason for change /*raison du changement*	issue/*issue*	revision/*revision*	date/*date*

C H A N G E R E C O R D

Issue: 1 Revision: 1

reason for change/*raison du changement*	page(s)/*page(s)*	paragraph(s) /*paragraph(s)*

Table of Contents

Table of Figures

Table of Tables

1. INTRODUCTION

The MERIS Cyclic Report (CR) is distributed by ESRIN- SPPA (Sensor Performance Products and Algorithms) to keep the MERIS Community informed of any modification regarding the processor, updates of auxiliary products, behavioural anomalies of the instrument, data acquisition and processing, and the status of the Calibration, Validation, and Quality Control activities.

The Cyclic Report collects the inputs coming from different groups involved in MERIS data exploitation:

- ESRIN- Product Control Facility (PCF)
- Quality Working Group (QWG)
- MERIS/AATSR validation team (MAVT)
- Brockmann Consult (BC)
- ACRI-ST
- ARGANS Ltd
- Laboratoire d'Océanographie de Villefranche (LOV)
- Centre National d'Études Spatiales (CNES)
- Frei Universitat Berlin (FUB)
- Laboratoire Interdisciplinaire en Sciences de l'Environnement (LISE)

The main objective of the Cyclic Report is to provide the user community with useful information regarding the performance of the instrument, the data production chain and the results of calibration activities and validation campaigns. The Cyclic Report is produced at the end of each ENVISAT Cycle, which represents 501 orbits (approximately 35 days).

1.1 Acronyms and abbreviations

ADF	Auxiliary Data File
ADS	Auxiliary Data Server
ARF	Archiving Facility (PDS)
CNES	Centre National d'Études Spatiales
CTI	Configuration Table Interface
CR	Cyclic Report
DAC	Diffuser Ageing Calibration
DMOP	Detailed Mission Operation Plan
DOY	Day Of Year
DS	Data Server
DSD	Data Set Descriptor
EDAC	Error Detection and Correction
ESRIN	European Space Research INstitute
FOV	Field Of View
FR	Full Resolution
FUB	Freie Universitat Berlin
GS	Ground Segment
IAT	Interactive Analysis Tool
IDL	Interactive Data Language
IECF	Instrument Engineering and Calibration Facilities
IPF	Instrument Processing Facilities (PDS)
INV	Inventory Facilities (PDS)
JRC	Joint Research Centre
LAN	Local Area Network
LISE	Laboratoire Interdisciplinaire en Sciences de l'Environnement
LOV	Laboratoire d'Océanographie de Villefranche-sur-Mer
LUT	Look Up Table
MERIS	Medium Resolution Image Spectrometer
MPH	Main Product Header
OP	Operational Phase of ENVISAT
OCL	Offset Control Loop
OCM	Orbit Control Manoeuvre
PAC	Processing and Archiving Centre (PDS)
PDCC	Payload Data Control Centre (PDS)
PDHS	Payload Data Handling Station (PDS)
PDS	Payload Data Segment
PEP	Payload Exploitation Plan
QC	Quality Control
QWG	Quality Control Working Group
QUARC	Quality Analysis and Reporting Computer
RGC	Radiometric Gain Calibration

RR	Reduced Resolution
SEU	Single Event Upset
SPH	Specific Product Header
SQADS	Summary Quality ADS
VEU	Video Electronic Unit
WV1	Wavelength Type 1 Calibration
WV2	Wavelength Type 2 Calibration
YSM	Yaw Steering Mode

2. SUMMARY

Cycle #81 began on the 20th July (DOY 201) and ended on the 24th August (DOY 236). Details about the Cycle can be found in Table 1 below:

Cycle number	**#81**
Start time	20th July 2009, 21:59:30
Stop time	24th August 2009, 21:59:29
Start orbit	38632
Stop orbit	39132

Table 1 – Cyclic Characteristics

3. PROCESSOR VERSION AND PROCESSOR CONFIGURATION

3.1 MERIS Processor Release

During Cycle #81, there were no changes to the MERIS processor configuration.

IPF Version	Validity	Reference Documents
5.05	11th June 2008, 13:53 UTC Orbit # 32844 →	1. ENVISAT Product Specification [Iss_5_Rev_A] 2. MERIS Input/output Data Definition [Iss_7_Rev_3a] 3. MERIS Level 1b Detailed Processing Model [Iss_7_Rev_0a] 4. MERIS Level 2b Detailed Processing Model [Iss_7_Rev_2a]

Table 2 – MERIS Processor Parameters – version 5.05

- **Auxiliary data files (ADF)**

Product description	Product name	Comment
Level 1 AUX Files		
Instrument Characterization Data	MER_INS	No change
Processing Level 1 Control Parameters data	MER_CP1	No change
Radiometric Calibration data	MER_RAC	No change
Digital Roughness Model	MER_DRM	No change
Digital Elevation Model	AUX_DEM	No change
Land Surface Map	AUX_LSM	No change
Attitude data file	AUX_ATT	No change
Level 2 AUX Files		
Aerosol Climatology data	MER_AER	No change
Atmosphere Parameter data	MER_ATP	No change
Cloud Measurement Parameters data	MER_CMP	No change
Processing Level-2 Control Parameters data	MER_CP2	No change
Land Aerosols Parameters data	MER_LAP	No change
Land Vegetation Index parameters data	MER_LVI	No change
Ocean Aerosols Parameters data	MER_OAP	No change
Ocean I parameters data	MER_OC1	No change
Ocean II parameters data	MER_OC2	No change
Surface Confidence Map	MER_SCM	No change
Water Vapour Parameters	MER_WVP	No change

Table 3 – Auxiliary Data Files in use for Cycle #81

Note: The other files not included into the list change every time (ECMWF).

3.2 Level 1/Level 2 Configuration (SciHiO2)

The current operational ADF files, used in the processing from Level 0 data to Level 1b or Level 2 products, are listed in the following tables (Tables 4 & 5).

- **Level 1 ADF configuration:**

Product name	Start Validity
AUX_ATT_AXVIEC20020924_131534_20020703_120000_20781231_235959	03/07/2002
AUX_DEM_AXVIEC20031201_000000_20031201_000000_20200101_000000	01/12/2003
AUX_LSM_AXVIEC20080218_104630_20020101_000000_20200101_000000	18/02/2008
MER_CP1_AXVIEC20050607_065745_20020321_193100_20120321_193100	21/03/2002
MER_DRM_AXVIEC20020122_083343_20020101_000000_20200101_000000	01/01/2002
MER_INS_AXVIEC20050708_134312_20050101_000000_20150101_000000	01/01/2005
MER_RAC_AXVIEC20061009_084736_20061009_220000_20161009_220000	09/10/2006

Table 4 – MERIS Level 1 Auxiliary Data Files

- **Level 2 ADF configuration:**

Product name	Start Validity
MER_AER_AXVIEC20040407_174356_20020321_193100_20120321_193100	21/03/2002
MER_ATP_AXVIEC20050628_123340_20021224_121445_20121224_121445	24/12/2002
MER_CMP_AXVIEC20040407_180835_20021224_121445_20121224_121445	24/12/2002
MER_CP2_AXVIEC20050704_065814_20021224_121445_20121224_121445	24/12/2002
MER_LAP_AXVIEC20050628_124246_20020321_193100_20120321_193100	21/03/2002
MER_LVI_AXVIEC20050704_145357_20020321_193100_20120321_193100	21/03/2002
MER_OAP_AXVIEC20050704_145633_20020321_193100_20120321_193100	21/03/2002
MER_OC1_AXVIEC20050704_145802_20020321_193100_20120321_193100	21/03/2002
MER_OC2_AXVIEC20050628_123950_20020321_193100_20120321_193100	21/03/2002
MER_SCM_AXVIEC20030620_120000_20020321_193100_20110725_103844	21/03/2002
MER_WVP_AXVIEC20040407_181941_20020321_193100_20120321_193100	21/03/2002

Table 5 – MERIS Level 2 Auxiliary Data Files

3.3 Configuration Table Interface (CTI)

No new CTIs were disseminated during Cycle #81.

3.4 **Level 1/ Level 2 RR or FR products**

No format changes or algorithm modifications regarding MERIS RR and FR products were implemented into the operational processor during Cycle #81.

REMINDER:

In the middle of Cycle #47, some format changes or algorithm modifications regarding MERIS RR and FR products were implemented during the operational processor upgrade from v4.10 to 5.02.

The data changes decided within the Data Quality Working Group (QWG) are listed below:

- New Chlorophyll 1 polynomial characterisation from LOV (Laboratoire d'Océanologie de Villefranche – France)
- Chlorophyll 1 validity range set to [0.01,30.], no PCD raise when out of range
- Troposphere-free MAR99 replaces BLUE-⟨=1.5 (from previous BOMEM runs)
- Gothic R Look Up Table from LOV (Laboratoire d'Océanologie de Villefranche – France)
- Chlorophyll 2 conversion factors from GKSS (revised with latest Neural Network delivery)
- Yellow Substance coding offset and scaling factor changes (linear to log scale, same range)
- Chlorophyll coding range changes ([-2,2] in log10 scale instead of [-3,3] previously)
- Whitecaps threshold set to 10 $m.s^{-1}$
- New Case 2 Neural Network from GKSS (with and without linear reflectances as input)
- White scatterer threshold set to 4.8
- MTCI threshold on B13-B8 difference set to 0.05, on B10-B8 to 1e-6 (numerical purpose only), ceiling for B8 set to 0.3, floor for B9 to 0.1
- Preliminary version of LARS Look Up Tables from Hygeos

For further details concerning the changes, please refer to the documentation available at:
http://earth.esa.int/pcs/envisat/meris/documentation/MERIS_IPF_evolution.pdf

4. PDS STATUS

The statistics resulting from the query to the PDS inventory facility (INV) for the MERIS products availability are presented in the following paragraphs.

4.1 MERIS Level 0 products availability

Table 6 shows the statistics regarding the RR L0 availability (compared to the planned production). The format of Table 6 and Figure 1 reflects the aggregated data for the 5 weeks of the reporting period. Week 1 starts the 20th July 2009, 21:59:30 (orbit 38632). Week 5 ends the 24th August, 21:59:29 (orbit 39132).

Week	MER_RR_0P%	
	Inventoried	Missing
1	97.67	2.33
2	99.50	0.50
3	98.60	1.40
4	98.55	1.45
5	96.54	3.46

Table 6 – Reduced Resolution Level 0 products percentage availability

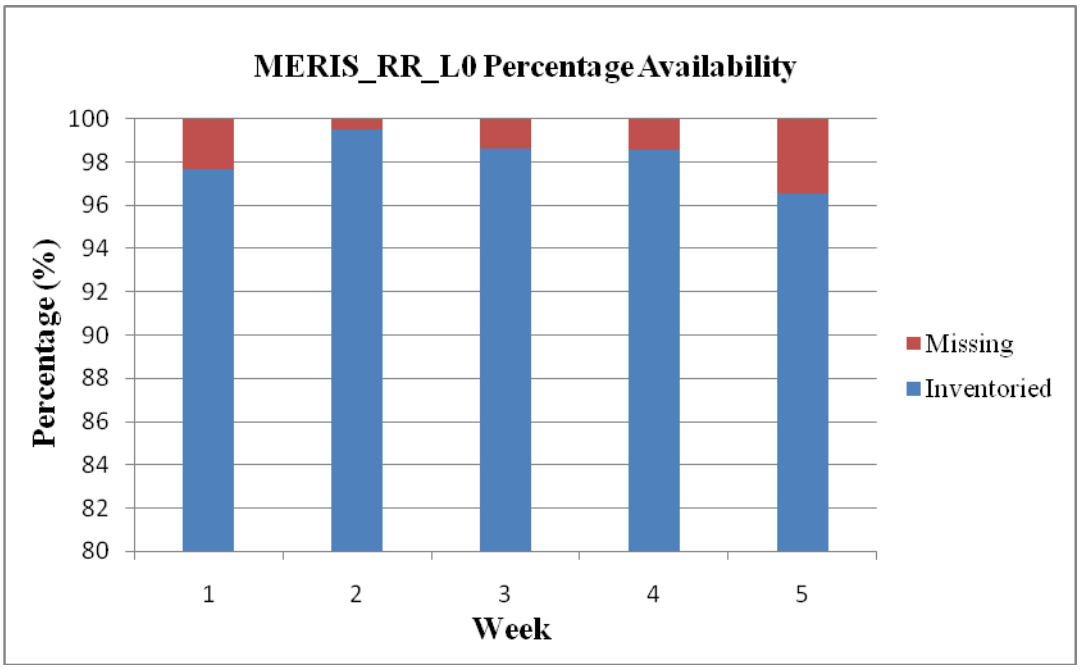

Figure 1 – MER_RR__0P generated/missing by the ground segment during Cycle #81

Table 7 shows the statistics regarding the FR L0 availability (compared to the planned production). The format Table 7 and Figure 2 reflects the aggregated data for the 5 weeks of the reporting period. Week 1 starts the 20th July 2009, 21:59:30 (orbit 38632). Week 5 ends the 24th August, 21:59:29 (orbit 39132).

Week	MER_FR_0P%	
	Inventoried	Missing
1	100	0
2	100	0
3	100	0
4	100	0
5	100	0

Table 7 – Full Resolution Level 0 products percentage availability

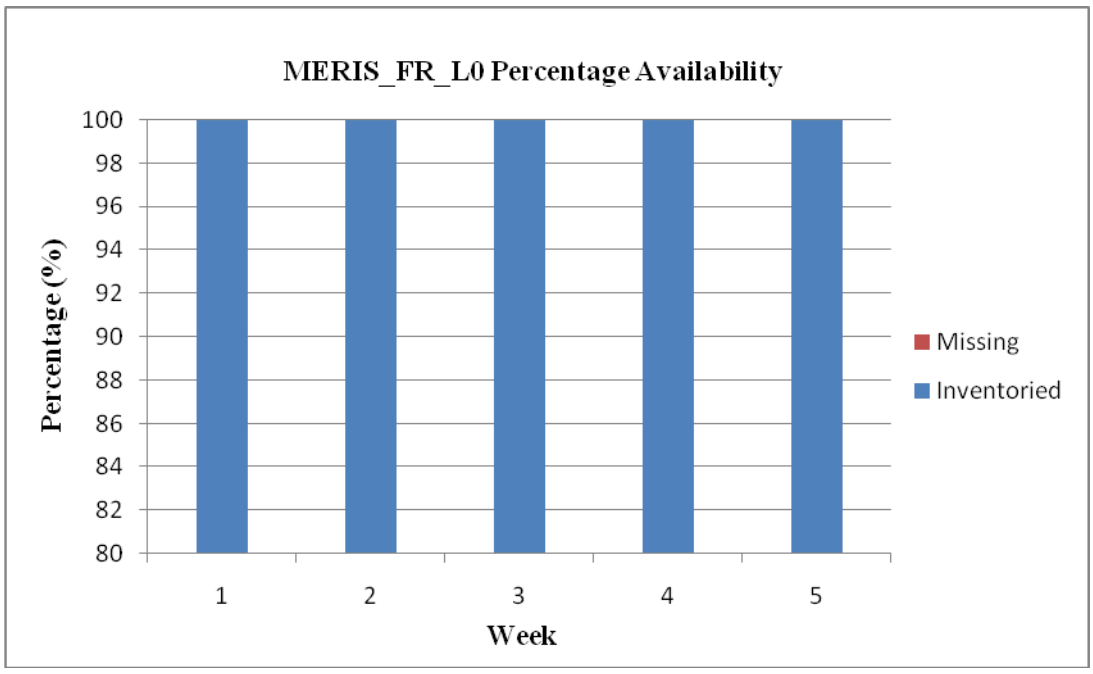

Figure 2 – MER_FR__0P generated/missing by the ground segment during Cycle #81

4.2 **MERIS FR acquisitions**

The Figures below show the MERIS Full Resolution global coverage for the reporting period. As specified for this type of MERIS products, all land and coastal areas are covered by MERIS FR acquisitions.

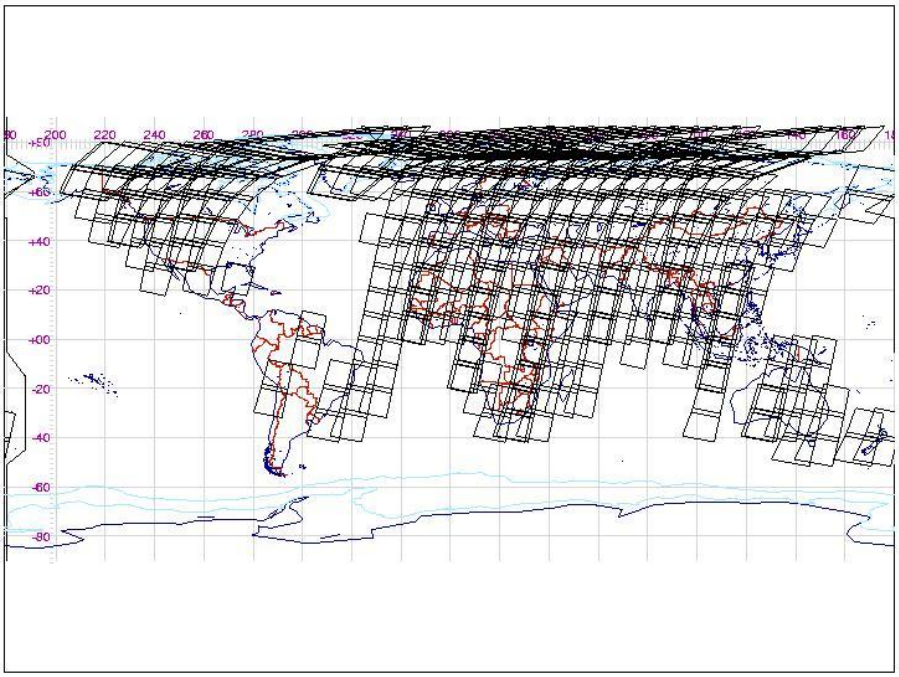

Figure 3 – MERIS FULL RESOLUTION LEVEL 0 ACQUISITIONS – PART #1 – 16/07/2009 – 20/07/2009

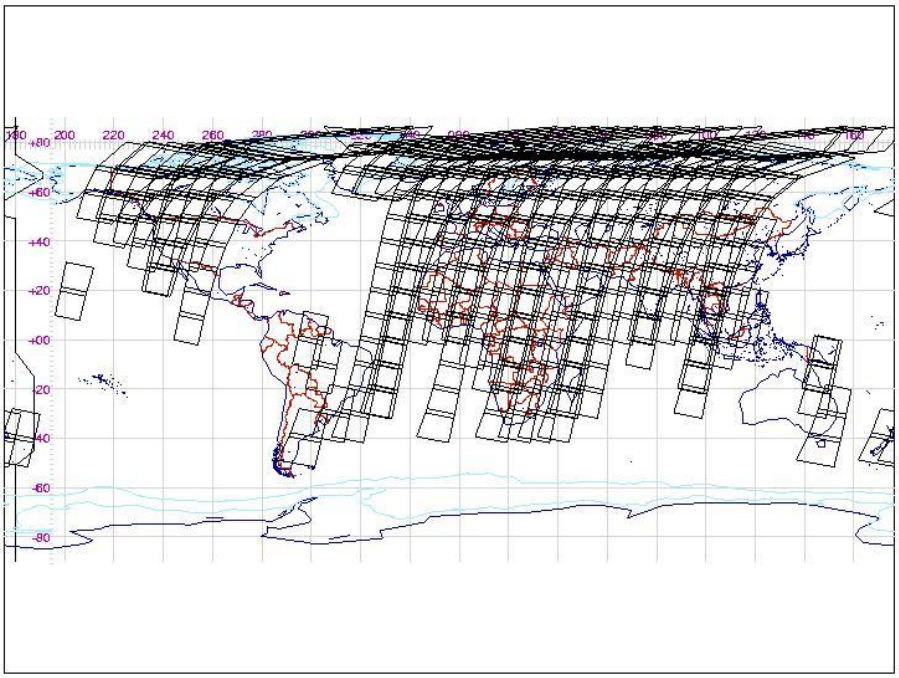

Figure 4 – MERIS FULL RESOLUTION LEVEL 0 ACQUISITIONS – PART #2 – 21/07/2009 – 25/07/2009

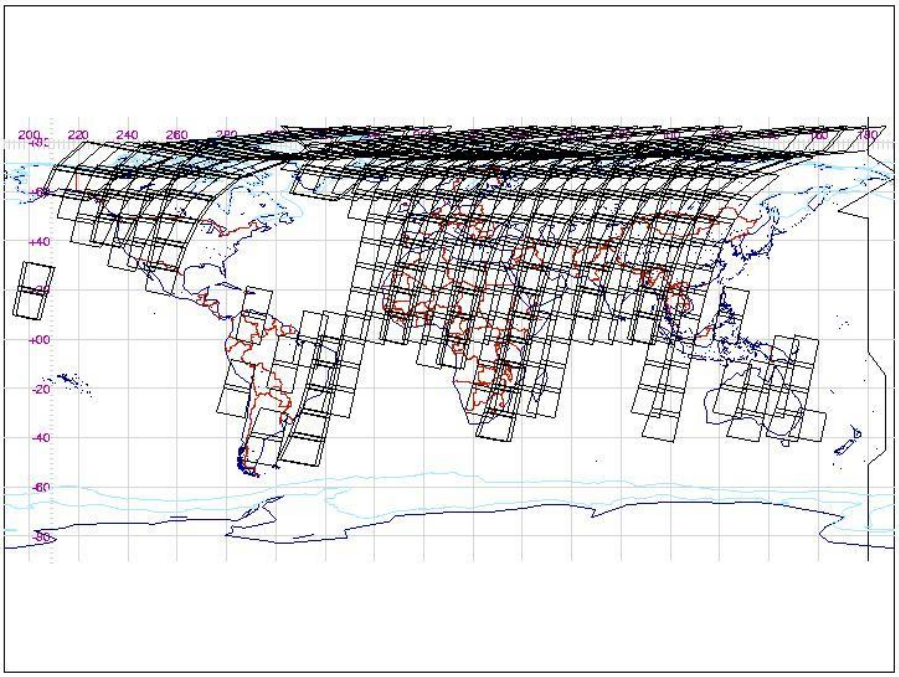

Figure 5 – MERIS FULL RESOLUTION LEVEL 0 ACQUISITIONS – PART #3 – 26/07/2009 – 30/07/2009

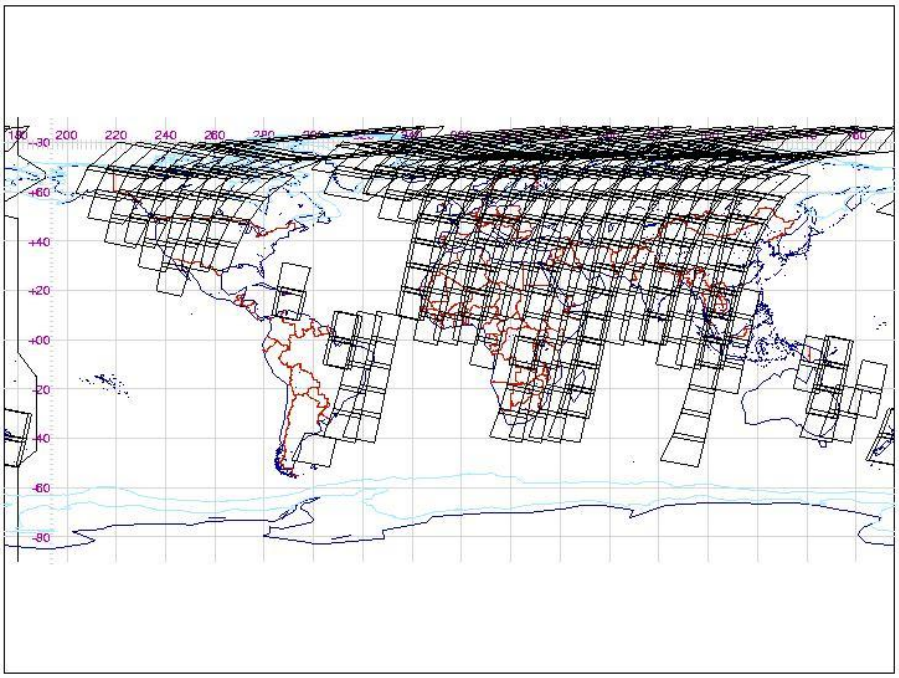

Figure 6 – MERIS FULL RESOLUTION LEVEL 0 ACQUISITIONS – PART #4 – 31/07/2009 – 04/08/2009

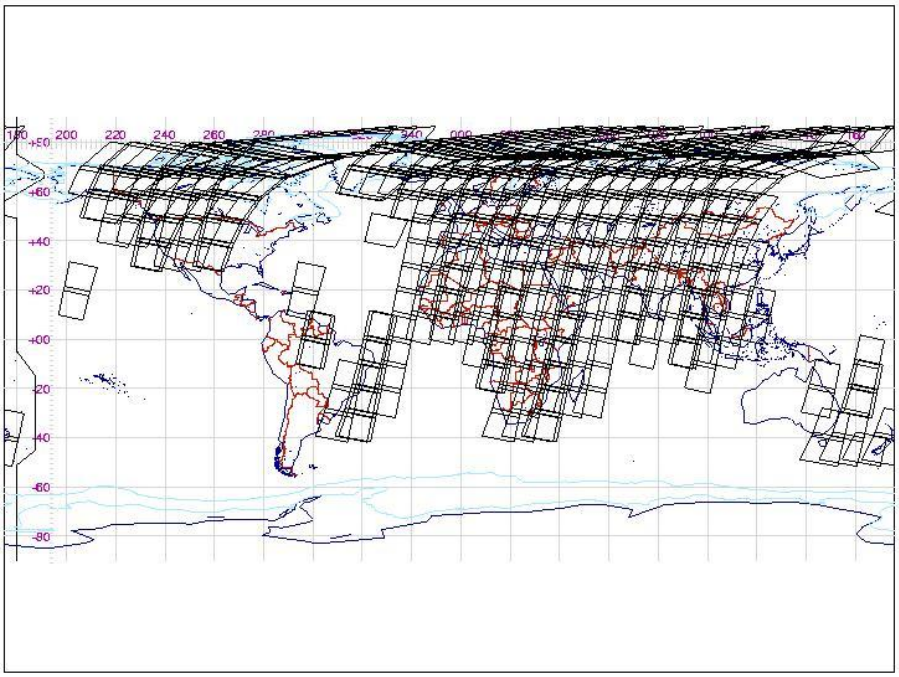

Figure 7 – MERIS FULL RESOLUTION LEVEL 0 ACQUISITIONS – PART #5 – 05/08/2009 – 09/08/2009

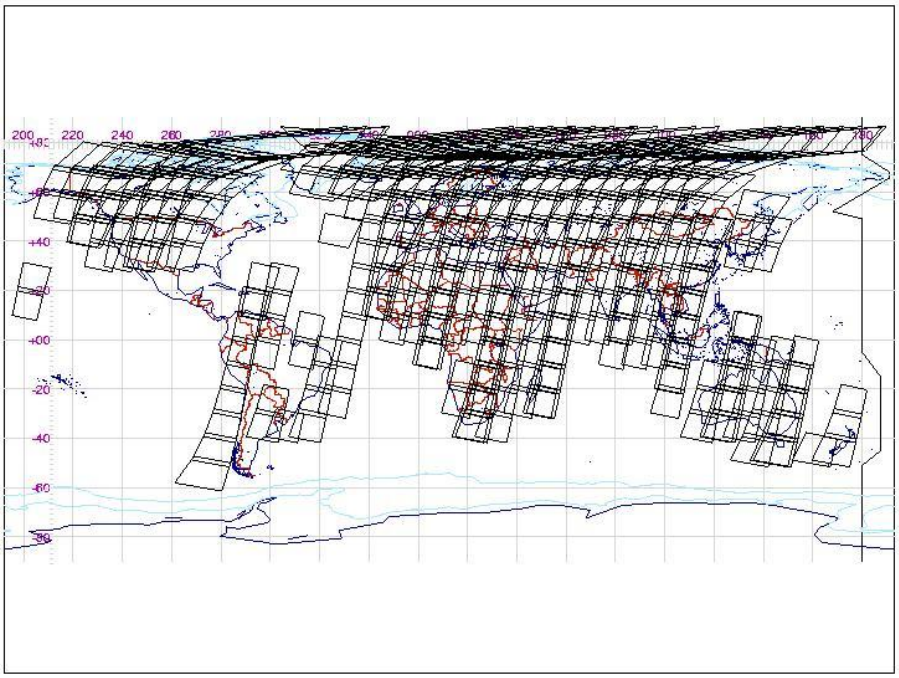

Figure 8 – MERIS FULL RESOLUTION LEVEL 0 ACQUISITIONS – PART #6 – 10/08/2009 – 14/08/2009

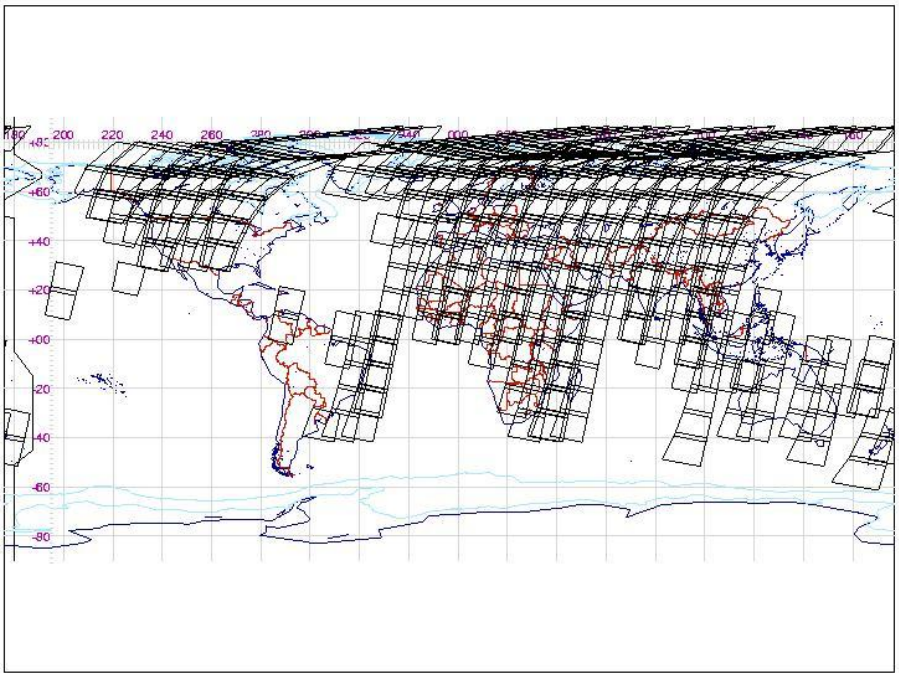

Figure 9 – MERIS FULL RESOLUTION LEVEL 0 ACQUISITIONS – PART #7 – 15/08/2009 – 19/08/2009

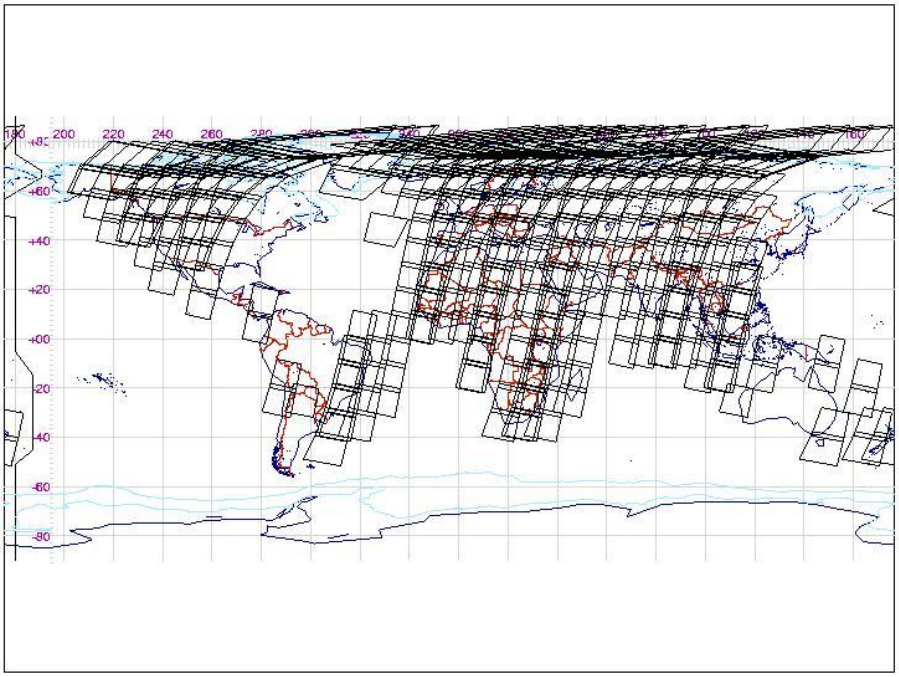

Figure 10 – MERIS FULL RESOLUTION LEVEL 0 ACQUISITIONS – PART #8 – 20/08/2009 – 24/08/2009

4.3 **MER_CA__0P Products**

During the Reporting Period, the following Calibration campaigns were successfully completed:

- A Radiometric Calibration was successfully executed on Wednesday 22nd July 2009 (DOY 203) at 20:56:14z during orbit #38660.

- A Radiometric Calibration was successfully executed on Wednesday 5th August 2009 (DOY 217) at 20:16:00z during orbit #38860.

- A Radiometric Calibration was successfully executed on Wednesday 19th August 2009 (DOY 231) at 19:35:46z during orbit #39060.

The corresponding available calibration file is as follows:

MPL_CAL_MEVRGT20021212_160527_00000000_00000005_20030203_141643_20781231_235959.N1

5. INSTRUMENT/DATA UNAVAILABILITY

5.1 Instrument Unavailability

Table 8 (below) sets out the total number of EDAC-corrected Single Event Upsets (SEU) for Cycle #81. The entries in **bold** are SEU outside the SAA:

	Date/Time	Lon.	Lat.
1	202.15.40.59	88.15° W	18.73° S
2	203.11.49.56	31.47° W	24.99° S
3	**203.17.24.13**	**75.77° E**	**38.48° S**
4	204.01.51.47	54.42° W	22.33° S
5	204.14.37.15	71.92° W	16.95° S
6	205.01.23.33	49.33° W	10.32° S
7	205.02.57.45	68.87° W	33.0° S
8	205.10.41.47	11.57° W	7.52° S
9	205.12.27.25	40.92° W	25.40° S
10	205.14.02.58	61.86° W	7.47° S
11	206.00.50.11	40.0° W	16.54° S
12	206.02.28.06	62.83° W	26.05° S
13	206.13.37.32	59.21° W	29.41° S
14	208.14.11.17	65.41° W	16.75° S
15	210.02.02.52	56.98° W	23.58° S
16	210.02.07.09	60.53° W	8.36° S
17	210.13.05.55	47.87° W	9.19° S
18	211.01.29.46	47.73° W	28.82° S
19	**211.22.12.41**	**139.85° W**	**77.71° N**
20	**212.09.03.51**	**70.60° W**	**81.46° S**
21	**212.18.18.42**	**64.02° W**	**80.26° N**
22	213.02.16.20	64.67° W	3.89° N
23	214.12.41.08	42.29° W	13.10° S
24	214.12.41.54	42.91° W	15.83° S
25	208.14.11.17	65.41° W	16.75° S
26	215.13.51.22	60.56° W	17.56° S
27	216.11.42.15	30.24° W	28.56° S
28	216.13.22.10	54.76° W	26.14° S
29	**217.23.12.25**	**60.97° E**	**81.34° S**
30	217.23.34.21	22.10° W	9.92° S
31	218.01.15.22	47.58° W	8.43° S
32	**218.05.54.40**	**36.21° W**	**81.42° S**
33	218.14.01.33	66.03° W	33.30° S

34	220.01.47.25	52.44° W	27.27° S
35	220.12.53.51	46.18° W	17.52° S
36	220.14.34.28	71.34° W	17.58° S
37	220.14.34.37	71.47° W	18.12° S
38	221.01.14.02	42.84° W	33.49° S
39	221.01.19.25	47.66° W	14.43° S
40	221.01.22.49	50.37° W	2.33° S
41	221.03.00.26	73.15° W	12.94° S
42	215.13.51.22	60.56° W	17.56° S
43	222.04.09.38	90.57° W	12.15° S
44	223.01.53.13	53.94° W	27.04° S
45	**224.06.05.11**	**16.32° W**	**81.20° S**
46	224.14.12.24	68.29° W	31.11° S
47	225.15.21.52	86.02° W	32.84° S
48	**227.04.24.56**	**63.08° E**	**67.04° S**
49	**227.13.41.37**	**82.81° E**	**77.34° N**
50	228.15.24.11	84.31° W	20.75° S
51	**229.04.05.29**	**99.86° W**	**44.60° N**
52	229.09.48.26	0.97° E	12.46° S
53	229.13.10.37	50.12° W	15.97° S
54	230.12.40.36	43.57° W	21.66° S
55	230.13.11.56	140.87° E	45.76° S
56	**231.08.24.50**	**38.43° E**	**59.43° N**
57	231.12.08.56	35.63° W	21.51° S
58	**232.19.22.22**	**21.14° E**	**64.47° N**
59	234.01.06.00	41.32° W	31.20° S
60	234.13.50.54	58.64° W	5.99° S
61	234.22.58.19	12.28° W	15.13° S
62	234.22.59.28	13.21° W	11.04° S
63	235.10.01.47	3.44° W	19.16° S
64	235.11.46.29	32.35° W	33.67° S
65	**229.04.05.29**	**99.86° W**	**44.60° N**
66	236.14.32.26	71.39° W	20.85° S

Table 8 – EDAC-corrected Single Event Upsets (SEU) for Cycle #81

5.2 **Data Unavailability**

The following data unavailability occurrences have been reported during Cycle #81:

Flight segment anomalies:-

- On Tuesday the 21st July 2009 (DOY 202) at 04:40:00z, MERIS was unavailable due to an Orbital Control Manoeuvre (OCM). Normal operations were resumed at 06:22:30z.
- On Tuesday 11th August 2009 (DOY 223) at 04:10:30z, MERIS SDPSS unexpectedly switched to PAUSE mode (Ref: AR ENV_SC-911). Normal operations were resumed at 04:11:36z.
- On Tuesday 18th August 2009 (DOY 230) at 09:01:26z, MERIS SDPSS unexpectedly switched to PAUSE mode (Ref: AR ENV_SC-911). Normal operations were resumed at 09:02:00z.
- On Thursday the 20th August 2009 (DOY 232) at 01:35:29z, due to a change in ARTEMIS AOC mode regarding manual handling of the moon eclipse, the following services were affected: SR_31622 (complete loss). Normal operations were resumed at 02:08:50z
- On Sunday 23rd August 2009 (DOY 235) at 06:45:10z, MERIS SDPSS unexpectedly switched to PAUSE mode (Ref: AR ENV_SC-911). Normal operations were resumed at 06:46:26z.
- On Monday 24th August 2009 (DOY 236) at 05:37:21z, there was a complete loss of service SR_31694 due to corrupted TC sequence. Normal operations were resumed at 06:24:34z.

Ground segment anomalies:-

None

6. CALIBRATION AND INSTRUMENT CHARACTERIZATION

6.1 Calibration

6.1.1 Radiometric Calibration

Cycle #81 radiometric calibrations are detailed in Subsection 4.3.

6.1.2 Spectral Calibration

Cycle #81 spectral calibrations (Wavelength Type 1 or 2) are detailed in Subsection 4.3.

6.1.3 Geolocation

The accuracy specification for MERIS geolocation is 2000 metres, with an operational goal of 150 metres. The 290 metre (nadir) bands 2, 5, 8 are used to estimate the absolute accuracy of geolocation.

This analysis shows significant improvements since launch, with one major upgrade, which occurred in 2003 DOY (Day of Year) 343. The update of the star tracker has been performed in order to reduce the systematic offset and improve orientation parameters. Global absolute geolocation error (North and South hemispheres) for the three consecutive periods can be summarized as follows:

(I) Initially, after the launch, according to results related to the 2002 period, the geolocation accuracy is in the order of ±135 metres along-track and ±207 metres across-track. The RMS absolute geolocation error stays within the range of **251.24** ± **81** metres.

(II) The 2003 period is characterised by a degradation of the absolute geolocation accuracy where error is around ±209 metres along-track and ±295 metres across-track. For this period, the RMS absolute geolocation error stays within the range of 368.39 ± 67 metres.

(III) After the update, 2004 period, MERIS geolocation is achieving the goal of 300 metres with accuracy of ± 132 metres along-track and ± 165 metres across-track. The RMS absolute geolocation error remains within the range of **212** ± **22** metres.

When correcting products from the systematic offset (centred results), for the 2004 period the RMS absolute geolocation error stays within the range of **166** ± **18** metres. The amount of products located on northern hemisphere is much larger than the one from the Southern hemisphere. Comparison between the two sets of results is not trivial. For the 2004 period, this study demonstrated the temporal stability of the absolute geolocation. More results are now needed to confirm this trend.
For more details, refer to the Gael Consultant (Fr) report available on the ESA website:
http://earth.esa.int/pcs/envisat/meris/reports/

6.1.4 Video Electronic Unit Temperature Analysis

During one of the operation modes of MERIS (Stabilization mode), a thermal regulation of the VEU is performed. This is carried out in order to both stabilise its temperature and to reach optimum performance levels, thereby ensuring a smooth and safe transition towards Observation and Calibration modes.

During observation, in order to meet the image quality requirements, the VEU temperature has to remain in the operationally acceptable temperature range of -10°/+50°. Furthermore, to ensure optimum performance levels of the instrument, the variation in VEU maximum and minimum temperature values should not differ more or less than 10°C ($^{+/-}$10°C) from the previous radiometric calibration.

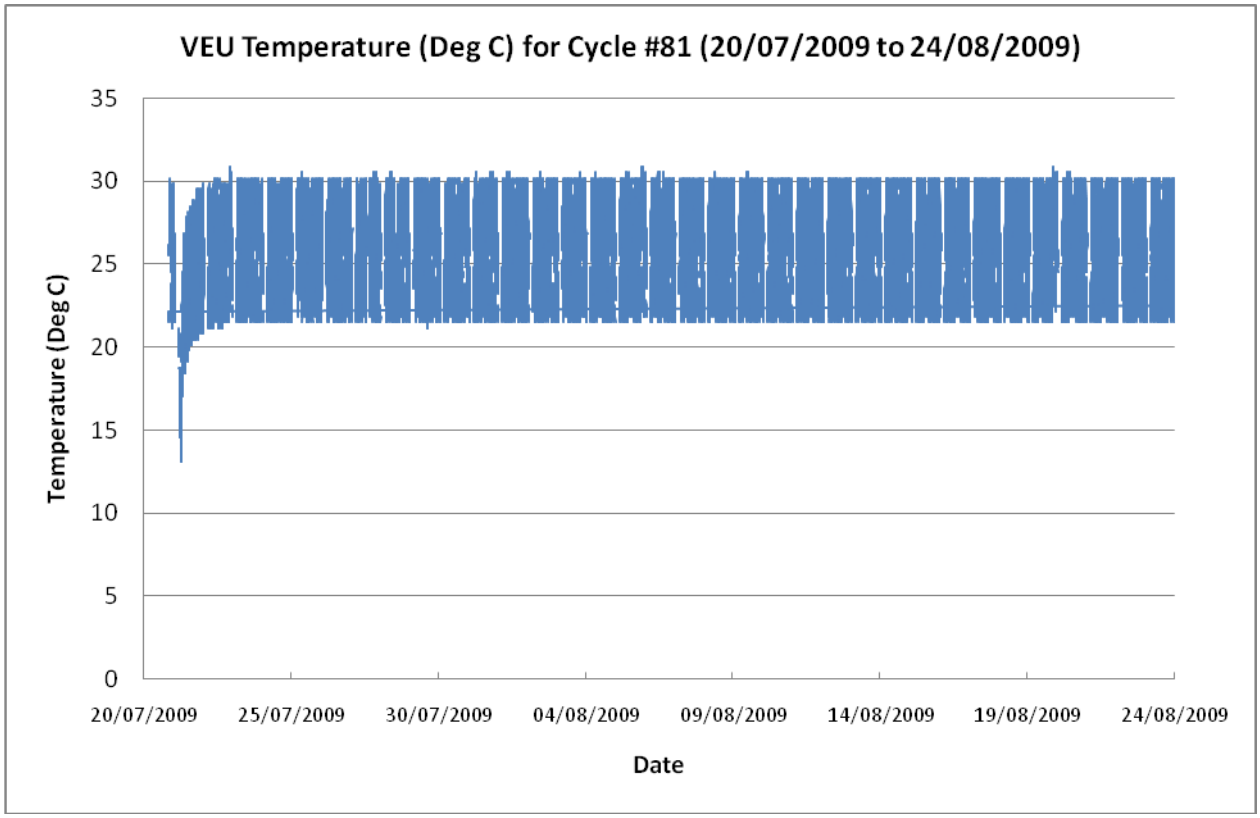

Figure 11 – VEU Temperature during Cycle #81

Note: The drop in Temperature in the above plot is from DOY 202 (July 21st, 2009): MERIS unavailability due to an OCM.

6.1.5 Vicarious calibration results

For absolute calibration of MERIS by vicarious methods, METRIC2.0 tools are used to perform data extraction and spatial compression from MERIS Level1b products over specified sites following site type-specific radiometric and geographic criteria. The child L1b products are ordered systematically on the basis of sites definition and mission analysis. Because the list of sites can be over-dimensioned and vary with season, it has a validity period of 3 months. Each L1b child product is submitted to

METRIC with the correct version of auxiliary files MER_INS_AX and MER_CP1_AX used during its generation, and a dedicated resource file which stores all parameters necessary for data filtering (cloud and aerosol screening, distance from coast etc.). METRIC generates one file for each selected site pertaining to the following categories, according to the potential use of the data in the calibration processing: Rayleigh, Glitter, Desert, Snow, and Buoy. Output files have HDF format.

A map showing Calibration Sites used is given in Figure 12:

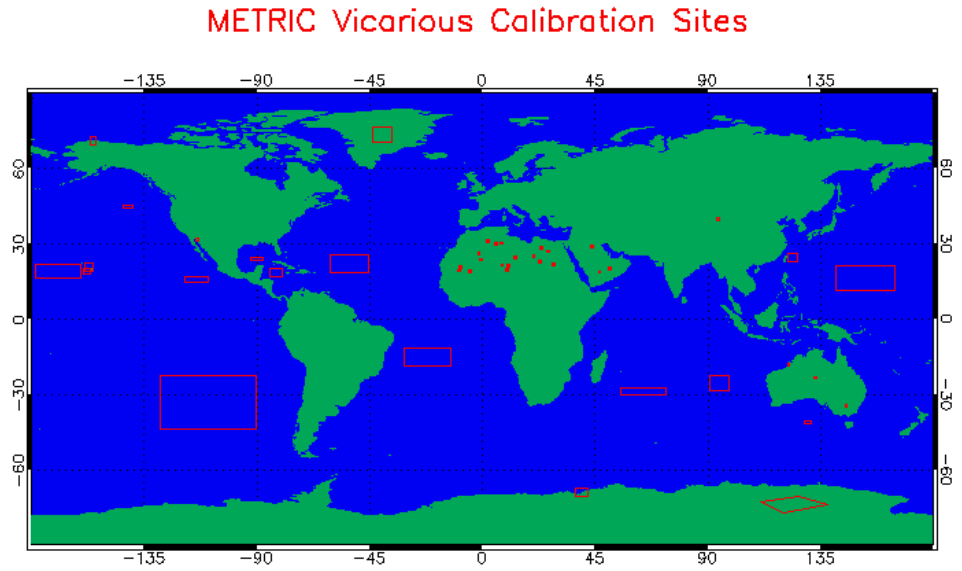

Figure 12 – Map of METRIC Calibration Sites

During Cycle #81, METRIC has generated the following results for specific sites:

Sites	# number of METRIC output	# Submitted child L1b
Desert	1025	321
Glitter	152	152
Buoy	33	33
Snow	426	426
Rayleigh	175	133

Table 9 – METRIC Table for Cycle #81

Corresponding presentations can be found at:
http://envisat.esa.int/workshops/mavt_2006/MAVT-2006-0303_CTinel.pdf
http://envisat.esa.int/workshops/mavt_2006/MAVT-2006-0304_CTinel.pdf

Note: in the same Workshop, other results of vicarious calibration for MERIS, not based on METRIC extraction, were also presented.

6.2 Instrument Characterization

6.2.1 Instrument degradation

No new results to be shown for Cycle #81. For the most recent updates, refer to Cyclic Report #65 that can be found on the above-mentioned MERIS website.

6.2.2 Diffuser ageing

No new results to be shown for Cycle #81. For the most recent updates, refer to Cyclic Report #65 that can be found on the above-mentioned MERIS website.

6.2.3 Smile Effect

No new results to be shown for Cycle #81. For the most recent updates, refer to Cyclic Report #23 that can be found on the above-mentioned MERIS website.

6.2.4 Spectral evolution from erbium measurements

Analysis of the complete set of spectral calibration data from the Erbium doped diffuser confirms:

1. Stability of the absolute wavelength for cameras 1, 3 and 5.

2. Slight increase over time of the wavelength observed by a given CCD row for camera 2 and 4 (about 0.15 nm for camera 2 and 0.20 for camera 4). The curve trend seems however to go towards stabilisation.

Figure 13 (below) shows the evolution of the spectral calibration of MERIS around 408 nm and 520 nm with respect to Orbit #650.

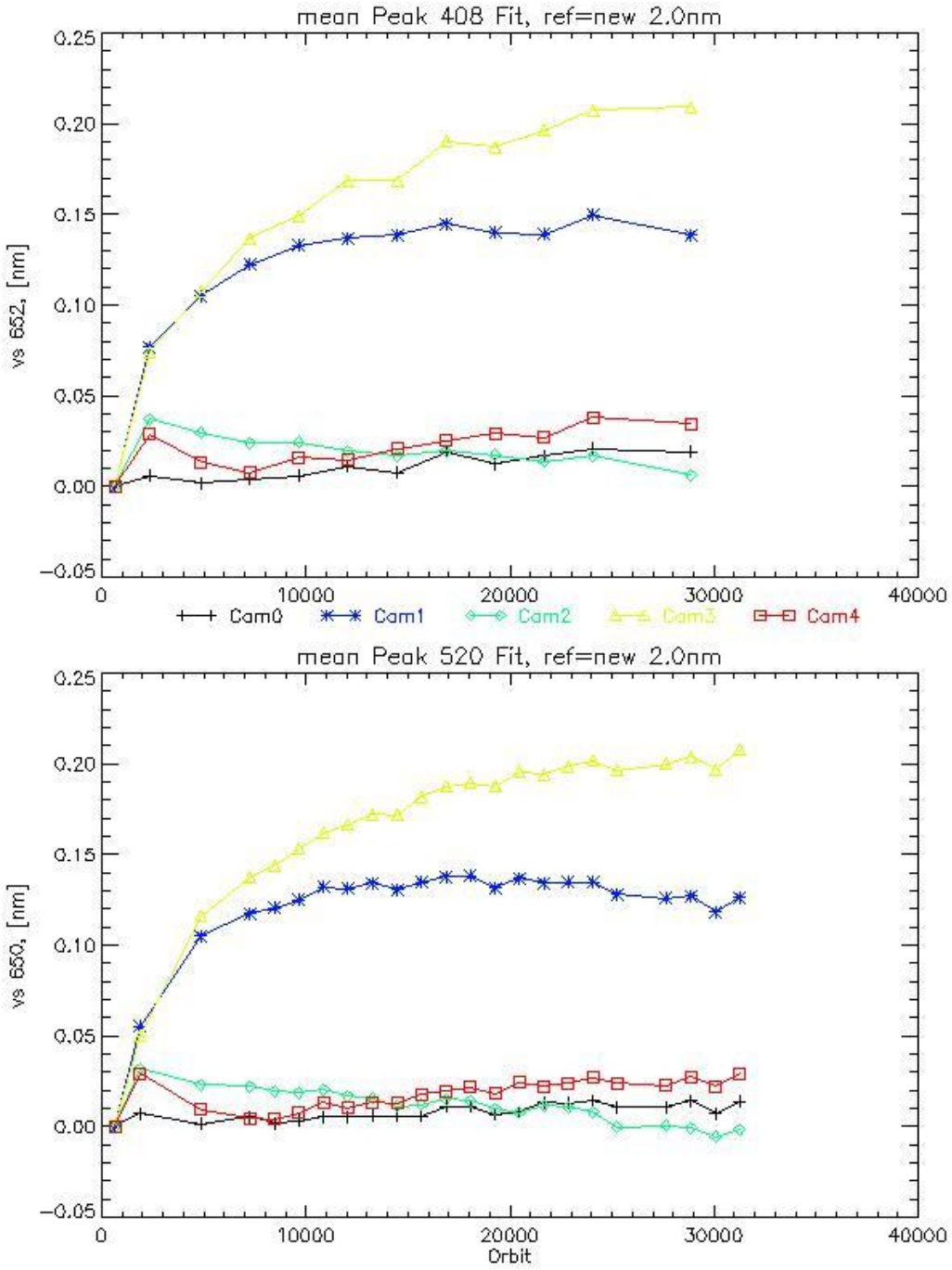

Figure 13 – Evolution of the spectral calibration of MERIS around 408 nm (top) and 520 nm (bottom) with respect to Orbit #650

7. DATA QUALITY CONTROL

7.1 MERIS products quality status

The evolution of the IPF version from 5.04 to 5.05 during Cycle #69 did not impact on MERIS product quality.

IPF version 5.02 did not have any impact on the MERIS products quality; an increase of the Level 2 processing time was reported. This is linked to the increase in the number of pixels taken into account for the retrieval of aerosols over land, and the more detailed aerosols LUT.

The current version is IPF 5.05, and it has been operational since 11th of June 2008.

The full evolution path can be found on Page 9 of the following document:

http://earth.esa.int/pcs/envisat/meris/documentation/MERIS_IPF_evolution.pdf

7.2 Anomalies and Software Problem Reporting (SPR)

Blank records have been identified in some MERIS products rejected by visual inspections using the AMALFI system. These black lines crossing the track are a nominal behaviour of the processor, which replaces missing or corrupted Instrument Source Packets (ISPs) with blank data to preserve the geographical consistency of the scene.

8. FIRST 2003 MERIS ARCHIVE REPROCESSING

Information concerning the 1st reprocessing of the 2003 MERIS data archive done spring 2004 can be found on the MERIS website:

http://earth.esa.int/pcs/envisat/meris/documentation/First_2003_MERIS_Reprocessing.pdf

The document explains also how to access the reprocessed data.

9. SECOND 2005 MERIS ARCHIVE REPROCESSING

Following the recommendations of the Data Quality Working Group and the Science Advisory Group, improvements to MERIS processing resulted in version 7.4 of the off-line processor MEGS. It is currently being used for a complete reprocessing of the MERIS Reduced Resolution data archive. The corresponding time period extends from June 2002 to June 2005. 2003 and 2004 data will be made available through the MERCI (MERIS Catalogue and Inventory) service by the end of year 2005. For further information see:

http://envisat.esa.int/services/catalogues.html

10. MERIS PROCESSOR EVOLUTION

A detailed description of the MERIS IPF evolution since March 2002 until present, in terms of data format changes and algorithm modifications, can be found on the MERIS website:

http://earth.esa.int/pcs/envisat/meris/documentation/MERIS_IPF_evolution.pdf.

11. VALIDATION ACTIVITIES AND RESULTS

The presentations given at the MAVT-2006 yield at ESRIN premises, Frascati, Italy, from the 20th to the 24th of March 2006 are now available at the following address:

http://envisat.esa.int/workshops/mavt_2006/

12. WATER VAPOUR AND BROWSE MAPS

Water Vapour data, retrieved from MER_LRC_2P products, have been used to generate global coverage maps for each day of the cycle. Maps are available on the ESA website:

http://earth.esa.int/pcs/envisat/meris/maps/watervapour/

MERIS tracks for each day of the Cycle have been plotted using Browse products. Maps are available on the ESA website:

http://earth.esa.int/pcs/envisat/meris/maps/browse/

13. HOW TO GET MERIS DATA

Information concerning the different ways to access the MERIS data can be found on the MERIS website:

http://earth.esa.int/pcs/envisat/meris/documentation/Access_to_MERIS_data.pdf

14. GENERAL INFORMATION

1. The European Space Agency organised a joint MERIS and (A)ATSR user workshop, held at ESRIN, Frascati, Italy, on 26th to the 30th of September 2005. All information about the objectives of the workshop as well as the participants' presentations can be found on ESA's official page:

   http://envisat.esa.int/workshops/meris_aatsr2005/

2. The European Space Agency organised the second working meeting on MERIS and (A)ATSR Calibration and Geophysical Validation (MAVT-2006) in ESRIN, Frascati, Italy, from the 20th to the 24th of March 2006. All information about the objectives of the workshop as well as the participants' presentations can be found on ESA's official pages:

   http://envisat.esa.int/workshops/mavt_2006/

3. The European Space Agency organised a second joint MERIS and (A)ATSR user workshop, held at ESRIN, Frascati, Italy, from the 22nd to the 26th of September 2008. All information about the objectives of the workshop can be found on ESA's official page:

   http://earth.esa.int/meris_aatsr_2008/