
ENVISAT - AATSR

CYCLIC REPORT #44

	START	END
<i>DATE</i>	<i>02 JANUARY 2006</i>	<i>06 FEBRUARY 2006</i>
<i>TIME</i>	<i>21:59:29</i>	<i>21:59:29</i>
<i>ORBIT #</i>	<i>20095</i>	<i>20595</i>

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THE CYCLIC REPORT # 44

1 INTRODUCTION

The AATSR Cyclic Report is distributed by the AATSR DPQC team to keep the AATSR community informed of any modification regarding instrument performances, the data production chain and the results of calibration and validation campaigns at the end of each Envisat cycle, which consists of 501 complete orbits over the course of 35 days.

This document is available online at: <http://earth.esa.int/pcs/envisat/aatsr/reports/cyclic/>

1.1 *Acronyms and Abbreviations*

AATSR	Advanced Along Track Scanning Radiometer
CR	Cyclic Report
DDS	Data Dissemination System
DMOP	Detailed Mission Operation Plan
DMS	Data Management System
DPQC	Data Product Quality Control
EN-UNA-YYYY/#	Envisat Unavailability (plus year and number)
ESOC	European Space Operation Centre
HSM	High Speed Multiplexer
IECF	Instrument Engineering and Calibration Facilities
IPF	Instrument Processing Facilities
MPS	Mission Planning Schedule
NRT	Near Real Time
OCM	Orbit Control Manoeuvre
PDS	Payload Data Segment
PMC	Payload Management Computer
SPR	Software Problem Reporting
SW	Software
VISCAL	Visible Calibration

The AATSR list of acronyms and abbreviation is in the following site:
<http://envisat.esa.int/dataproducts/aatsr/CNTR5.htm#eph.aatsr.glossary>

2 SUMMARY

Cyclic Report: 44
Cycle Start: 02 January 2006, 21:59:29, Orbit #: 20095
Cycle End: 06 February 2006, 21:59:29 Orbit #: 20595

The main activities during the cycle have been as follows:

- **L0 Processor and IPF Version:**

L0 Processor – no change (5.22)

Level 1b & Level 2 processor – no change (5.59)

- **Visible channel calibration:**

The visible calibration data supplied as an aux file (ATS_VC1_AX) continued to be regularly updated throughout the cycle.

- **OCM:**

There was a period of planned unavailability during this cycle, which was an orbit out-of-plane manoeuvre, on 10 January 2006 from 01:00:00.00 – 13:00:00.00.

3 SOFTWARE & AUX FILE VERSION CONFIGURATION

3.1 Software Version

AATSR IPF for Level 1 and Level 2: Version 5.59

3.2 Auxiliary Files

AATSR processing uses the following auxiliary files:

- Browse Product Lookup Data (ATS_BRW_AX)
- L1b Characterisation Data (ATS_CH1_AX)
- Cloud Lookup Table Data (ATS_CL1_AX)
- General Calibration Data (ATS_GC1_AX)
- AATSR Instrument Data (ATS_INS_AX)
- Visible Calibration Coefficients Data (ATS_VC1_AX)
- L1b Processing Configuration Data (ATS_PC1_AX)
- L2 Processing Configuration Data (ATS_PC2_AX)
- SST Retrieval Coefficients Data (ATS_SST_AX)
- LST Land Surface Temperature Coefficients Data (ATS_LST_AX)

The latest filename for each auxiliary file in use in the PDS is as follows:

Product name
ATS_BRW_AXVIEC20020123_072338_20020101_000000_20200101_000000
ATS_CH1_AXVIEC20021114_113144_20020301_000000_20070801_235959
ATS_CL1_AXVIEC20020123_073044_20020101_000000_20200101_000000
ATS_GC1_AXVIEC20020123_073430_20020101_000000_20200101_000000
ATS_INS_AXVIEC20030731_092706_20020301_000000_20070801_235959
See below for VC1 files
ATS_LST_AXVIEC20040311_095537_20020301_000001_20070801_235959
ATS_PC1_AXVIEC20040812_063722_20020301_000000_20070801_235959
ATS_PC2_AXVIEC20020123_074151_20020101_000000_20200101_000000
ATS_SST_AXVIEC20051205_102103_20020101_000000_20200101_000000

Table 3-1 Latest auxiliary files currently in use by the PDS

3.2.1 STATUS OF DAILY VISIBLE CALIBRATION FILES

3.2.1.1 VC1 File Availability

Reflectance channel calibration files were available for all dates, except:

- 2nd January 2006

Additionally, none were generated on the dates when the OCM was taking place:

- 8th January 2006

3.2.2 STATUS OF OTHER AUXILIARY FILES

The following list highlights any of the other auxiliary files changed during this cycle.

Product name	Date Introduced	Validity Range	Reason for Change
No changes during this cycle			

4 PDS STATUS

4.1 *Instrument Unavailability*

AATSR data were unavailable due to instrument unavailability at the following times during the cycle:

UTC Start	UTC Stop	Reason	Reference	Planned
10 th January 2006 01:00:00.00	10 th January 2006 13:00:00.00	OCM	EN-UNA-2006/0012	Yes

4.2 *L0 Data Acquisition and L1b Processing Status*

The L0 data were available for 99.83% of the time during the cycle.

The L1b data were available for 99.05% of the time during the cycle.

The following L0 and L1b data were missing from this cycle:

NB Missing L0 data are automatically also missing at L1b. Therefore the missing L1b data specifically reported in Table 4-2 represent additional data gaps where the start time does not coincide with L0 data already known to be missing.

UTC Start	UTC Stop	Duration (s)	Orbit Start	Orbit End
02-Jan-2006 22:13	02-Jan-2006 22:14	56	20095	20095
24-Jan-2006 21:55	24-Jan-2006 23:16	4884	20409	20410
26-Jan-2006 19:42	26-Jan-2006 19:44	138	20437	20437

Table 4-1 ATS_NL__0P missing data during cycle 44

UTC Start	UTC Stop	Duration (s)	Orbit Start	Orbit End
05-Jan-2006 23:39	06-Jan-2006 01:08	5348	20138	20139
10-Jan-2006 13:00	10-Jan-2006 13:00	54	20204	20204
12-Jan-2006 02:41	12-Jan-2006 05:53	11546	20226	20228
01-Feb-2006 22:49	02-Feb-2006 00:19	5395	20524	20525
02-Feb-2006 09:08	02-Feb-2006 09:22	867	20531	20531
03-Feb-2006 02:51	03-Feb-2006 04:22	5469	20541	20542

Table 4-2 ATS_TOA_1P missing data during cycle 44

4.2.1 ORBITS AFFECTED BY POOR DATA QUALITY

The information reported in Table 4-1 & Table 4-2 does not consider the quality of data, only whether or not it is available.

In the following orbits, a few frames suffered from bad/missing telemetry:

- 20319 (18th January 2006)
- 20348 (20th January 2006)
- 20489 (30th January 2006)
- 20490 (30th January 2006)
- 20491 (30th January 2006)
- 20518 (1st February 2006)
- 20519 (1st February 2006)

4.3 L0 and L1b Backlog Processing Status

The following data gaps, reported as missing in Cyclic Report 43, are now available:

UTC Start	UTC Stop	Duration (s)	Orbit Start	Orbit End
28-Dec-2005 10:02	28-Dec-2005 13:12	11429	20016	20018
28-Dec-2005 15:02	28-Dec-2005 16:28	5155	20019	20020

5 DATA QUALITY CONTROL

5.1 *Monitoring of Instrument Parameters*

5.1.1 JITTER

The average scan-mirror jitter rate during most of this cycle was 0.01 jitters/sec or better.

No severe jitter periods were observed during this cycle.

Note that occasional, short duration periods of higher jitter-rate do occur, however, and users should check the jitter rate during the period covered by their products by checking the Scan Quality Annotation Data Sets (using EnviView, for example)

5.1.2 SENSOR TEMPERATURE

All sensors maintained their nominal orbital and seasonal ranges in this cycle.

5.1.3 VISCAL

Reflectance channel calibration files are available for all days except:

January 02 and 08

Nominal viscal characteristics were observed throughout the cycle where data were available, but note that for up to 5 weeks after the out-gassing period (16-19 December) optimum reflectance channel calibration requires a reflectance calibration file generated from data taken within a few hours of the data in any given product. (At other times, +/- 1 day is adequate.)

5.1.4 NE Δ T

	Hot BB T = 300.03K		Cold BB T = 261.04 K	
	Count	NEΔT (mK)	Count	NEΔT (mK)
12μm	1.45	30.1	1.12	33.0
11μm	1.45	29.9	1.08	32.9
3.7μm	2.34	29.6	1.16	74.3

Table 5-1 NEDT data for Cycle 44

5.2 User Rejections

There were no user rejections during this cycle.

5.3 Software Problem Reporting

This section describes the open SPRs, their potential impact on the data quality, and SPRs that have been closed.

5.3.1 EXISTING SPRS THAT ARE STILL OPEN

Unphysical sea surface temperature values in Level 2 AATSR products from PDHS-E at intervals of 480 rows:

Open – The investigation shows that the problem does not happen using the IPF 5.59 with respect to the IPF 5.52 on which the problem was detected. Further information on the changes introduced in V5.59 has been requested.

50 / 17 km Cell Size Anomaly in AST product:

Open – The reason for this effect is understood, but it is proposed that the cell size should stay as-is until further consultation with AATSR users has taken place.

Inconsistent values in AST confidence word, 17 km cell:

Investigation completed - to be corrected with a patch at the next appropriate opportunity.

5.3.2 NEW SPRS SINCE THE LAST CYCLIC REPORT

There are no new SPRs since the last Cyclic Report.

5.3.3 CLOSED SPRS

No SPRs have been closed since the last Cyclic Report.

6 CALIBRATION/VALIDATION ACTIVITIES & RESULTS

6.1 Calibration

No additional calibration results were reported during this cycle.

6.2 Validation

The Met Office has performed a comparison between AATSR dual view SST data and data collected from a network of in situ buoy SST values, the results for Cycle 44 being shown in Figure 6-1.

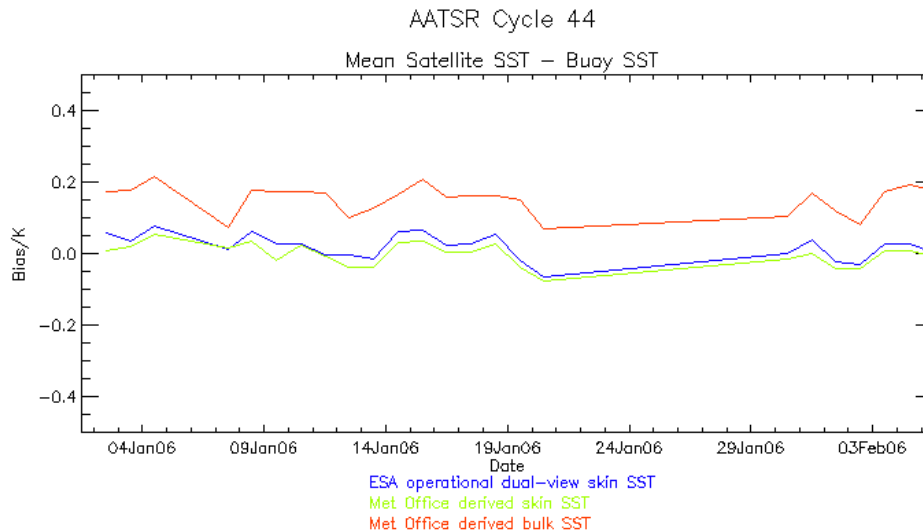


Figure 6-1 Comparison of daily mean difference between 10' AATSR SST values and in situ buoy SST for Cycle 44. Data provided by the Met Office.

During cycle 44, there were 1354 night time match-ups, with a mean (Met Office dual-view skin SST minus buoy SST) of +0.004 K, standard deviation 0.26 K, and a mean (dual-view bulk SST minus buoy SST) of +0.201 K, standard deviation 0.31 K. A total of 1281 daytime match-ups were found, with a mean (Met Office dual-view skin SST minus buoy SST) of +0.043 K, standard deviation 0.31 K, and a mean (dual-view bulk SST minus buoy SST) of 0.120 K, standard deviation 0.32 K. As these data are comparisons of a single point buoy measurement against a much larger spatially averaged value they are not a true indicator of AATSR's accuracy and are used to show consistency of data quality between cycles.

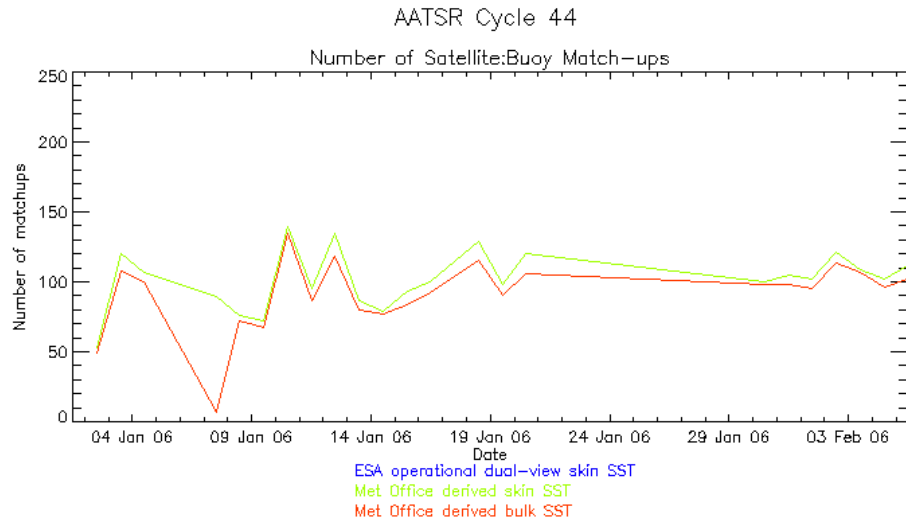


Figure 6-2 Plot of daily number of match-ups between 10' AATSR SST values and in situ buoy SST for Cycle 44. Data provided by the Met Office.

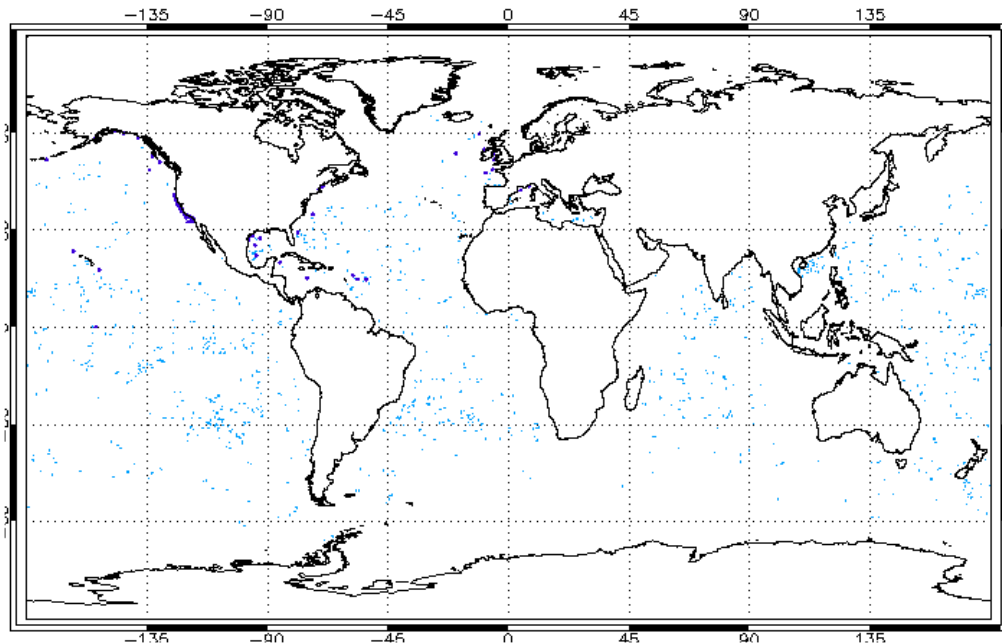


Figure 6-3 Map showing global distribution of match-ups between 10' AATSR SST values and in situ buoy SST for Cycle 42. Data provided by the Met Office.

A complete update on the status of the instrument validation can be found in Section 1.6.2 of Cyclic Report 28.

7 DISCLAIMERS

No new disclaimers have been issued during this cycle.