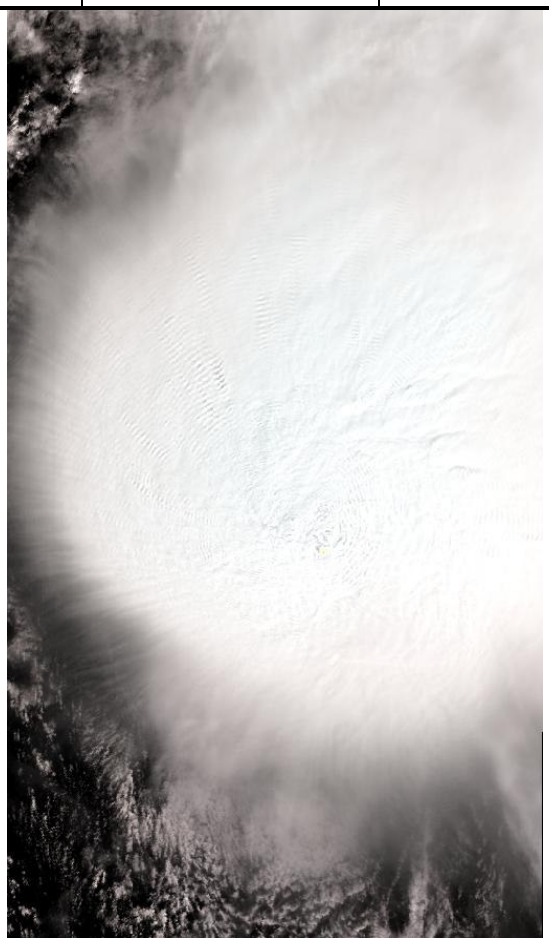
ENVISAT - AATSR

CYCLIC REPORT #51

	START	END
DATE	04 SEPTEMBER 2006	09 OCTOBER 2006
TIME	21:59:29	21:59:29
ORBIT #	23602	24102



Tropical Storm Bebinca, 05 October 2006 – This image was taken off the south coast of Japan.

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A P P R O V A L

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

Issue: 1 Revision: 0

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AATSR CYCLIC REPORT # 51

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
APC	Antenna Pointing Controller
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
OBDH	On-board Data Handling
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: 51
Cycle Start: 04 September 2006, 21:59:29, Orbit #: 23602
Cycle End: 09 October 2006, 21:59:29 Orbit #: 24102

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.

- **Envisat Anomaly:**

  There was a period of unplanned unavailability during this cycle which was due to a Service Module anomaly triggered on 07 September 2006 at 16:39:09; AATSR was returned to measurement on 11 September at 07.07.35.

- **OCM:**

  There was a period of planned unavailability during this cycle, which was due to an out-of-plane orbit manoeuvre on 13 September 2006 from 00:35:00 to 13:00:00.

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_AXVIEC20041214_154941_20020301_000000_20070801_235959
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 VISIBILE CALIBRATION FILES

3.2.1.1 VC1 File Availability

Reflectance channel calibration files were available for all dates, except for the following dates during the Envisat SM anomaly:

- 9th September 2006
- 10th September 2006

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

- 13th September 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

Table 4-1 Instrument unavailability during cycle 51

4.2 L0 Data Acquisition and L1b Processing Status

The L0 data were available for 93.67% of the time during the cycle.

The following L0 data were missing from this cycle; there were no additional missing L1b data for cycle 50:

NB Missing L0 data are automatically also missing at L1b.

UTC Start	UTC Stop	Duration (s)	Orbit Start	Orbit End
04-Sep-2006 23:24	04-Sep-2006 23:25	55	23602	23602
07-Sep-2006 15:46	07-Sep-2006 16:40	3256	23641	23641
26-Sep-2006 20:44	27-Sep-2006 07:34	39015	23916	23922
27-Sep-2006 20:12	28-Sep-2006 06:59	38841	23930	23936
28-Sep-2006 19:41	29-Sep-2006 06:28	38813	23944	23950
29-Sep-2006 20:51	30-Sep-2006 05:56	32734	23959	23964
30-Sep-2006 20:17	01-Oct-2006 07:05	38842	23973	23979

Table 4-2 ATS_NL__0P missing data during cycle 51

4.2.1 ORBITS AFFECTED BY POOR DATA QUALITY

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

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

- 23693 (11th September 2006)*
- 23953 (29th September 2006)

*known restart anomaly

4.3 L0 and L1b Backlog Processing Status

The list of data missing during the previous cycle has not changed.

5 DATA QUALITY CONTROL

5.1 Monitoring of Instrument Parameters

5.1.1 JITTER

The plot below shows the mean and maximum jitter rate as measured over the cycle. This has been another cycle in which the jitter rate has been significantly worse than that expected nominally, with both the mean and maximum rates increasing towards the end of the cycle. (The nominal mean jitter rate should be better than ~0.01jitter/sec when averaged over the orbit, with occasional short-duration peaks ~ 0.1jitter /sec)

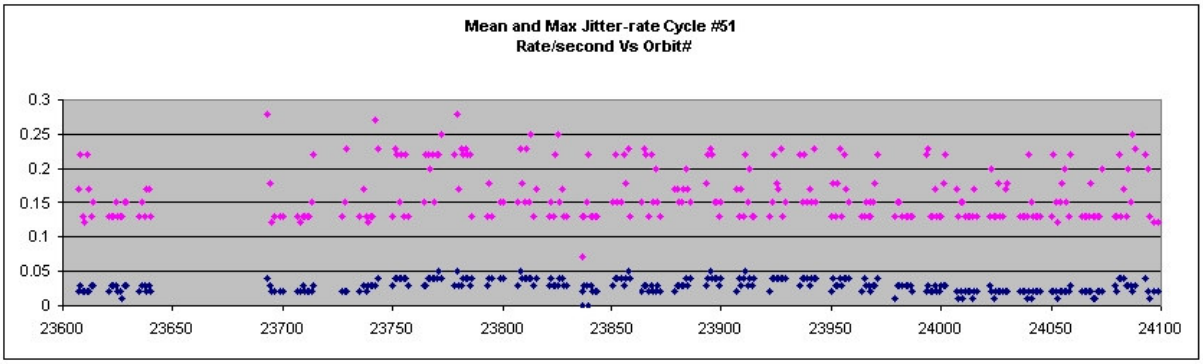

Figure 5-1 Jitter rates for Cycle 51

The data gap corresponds to the Envisat anomaly between September 7-11.

Users should check the jitter rate during the period covered by their products by checking the Scan Quality Annotation Data Sets (using EnviView or BEAM, for example).

5.1.2 SENSOR TEMPERATURE

All sensors maintained their nominal orbital and seasonal ranges in this cycle while AATSR was in measurement mode.

5.1.3 VISCAL

Reflectance channel calibration files are available for most days in this cycle, except:

September 08-10 (i.e. during the Envisat anomaly)

September 13

5.1.4 NE∆T

This information will be contained in the report for the next cycle.

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. No further instances of the problem have been reported. Original OAR (OAR-193) closed. Investigation will continue as a background task and a new OAR opened if necessary.

Inconsistent values in AST confidence word, 17 km cell:
Open - Investigation completed (an error has been found in the setting of the flag indicating the use of ir37 channel). To be corrected in IPF V6.0 to be released Spring 2007.

Cloud Flagging Errors leading to Missing Zones in Consolidated AATSR Data:
Open – Systematic bands of missing data were observed in monthly mean SST maps for December products from all years. The problem has been traced to a problem with the loading of the "12 micron gross cloud test" LUT from the relevant auxiliary file. The problem has been corrected and a patch will be provided for the IPF within the next few weeks.

5.3.2 NEW SPRS SINCE THE LAST CYCLIC REPORT

No new SPRs have been opened since the last Cyclic Report.

5.3.3 CLOSED SPRS

No new 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

A monthly mean global dual-view SST plot for Cycle 51 composed from ATS_AR__2P 10' data is shown below in Figure 6-1.

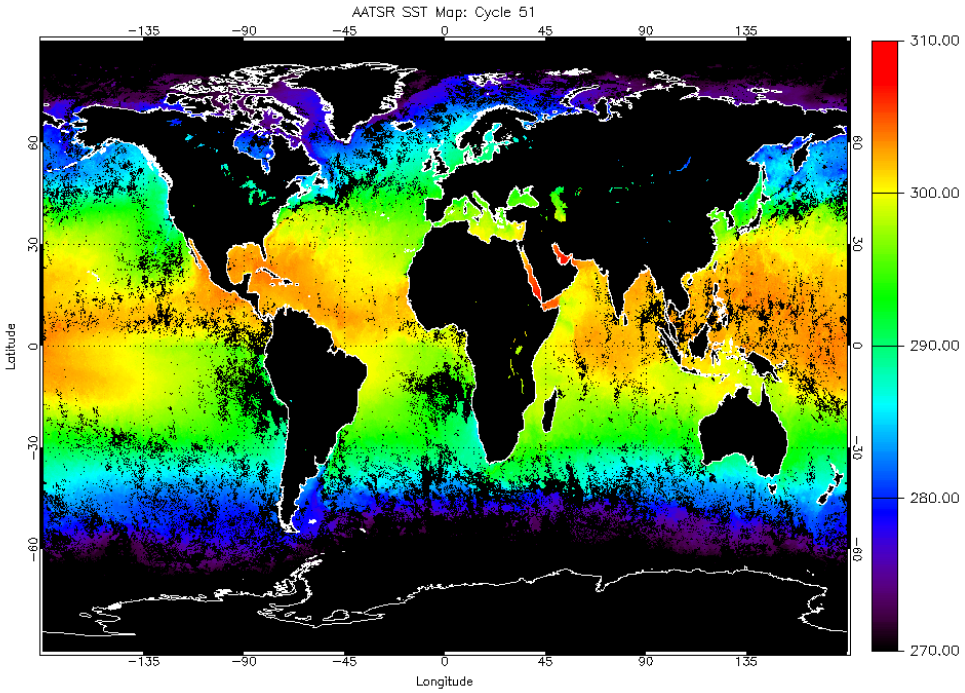

Figure 6-1: Monthly Global Average dual-view SST for Cycle 51.

The Met Office has validated the AATSR dual-view SST data using the global network of *in situ* buoy SST data. Owing to a problem with the BUFR encoded AATSR data used by the Met Office, it is not currently possible to distinguish between D2 and D3 SST retrievals or between day and night time data. Subsequently, it is not possible to provide meaningful statistics for this Cycle 51 at this time.

Note: The problem is only noted in the BUFR encoded ATS_MET_2P data for Cycle 51. The PDS format ATS_MET_2P data files for cycle 51 are unaffected.

Updated statistics for Cycle 50 will be provided in a future report.

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.