

ENVISAT - AATSR

CYCLIC REPORT #56

	START	END
<i>DATE</i>	<i>26 FEBRUARY 2007</i>	<i>02 APRIL 2007</i>
<i>TIME</i>	<i>21:59:29</i>	<i>21:59:29</i>
<i>ORBIT #</i>	<i>26107</i>	<i>26607</i>



Mediterranean Sea, 23 March 2007 – Showing the Strait of Gibraltar and the Alboran Sea.

prepared by/ <i>préparé par</i>	AATSR DPQC and QWG team
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AATSR CYCLIC REPORT # 56

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
LUT	Look Up Table
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: 56
Cycle Start: 26 February 2007, 21:59:29, Orbit #: 26107
Cycle End: 02 April 2007, 21:59:29 Orbit #: 26607

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 – updated (6.0)

Version 6.0 of the IPF was implemented on 28 March 2007. The first NRT orbits to be processed using this version were 26530 at Kiruna (PDHS-K) and 26535 at ESRIN (PDHS-E). Data quality following the switch was confirmed as nominal.

- **Visible channel calibration:**

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

3 SOFTWARE & AUX FILE VERSION CONFIGURATION

3.1 Software Version

AATSR IPF for Level 1 and Level 2: Version 6.0

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_AXNIEC20070223_102348_20010308_120446_20120801_235959
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 VISIBLE CALIBRATION FILES

3.2.1.1 VC1 File Availability

The daily reflectance channel calibration files were available for all dates, except for the following:

- 26th March 2007
- 29th March 2007

The orbital reflectance channel calibration files VC1 files were created from the available L0 files for all dates, except for the following:

- 29th March 2007

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
ATS_CL1_AX	28-Mar-07	08 March 2001 – 01 August 2012	Updates to the datasets in the Cloud LUT to support new and modified cloud flags.

4 PDS STATUS

4.1 Instrument Unavailability

There were no periods of instrument unavailability during the cycle.

4.2 L0 Data Acquisition and L1b Processing Status

The L0 data were available for 96.61% of the time during the cycle.
 The L1b data were available for 94.57% 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
26-Feb-2007 23:24	26-Feb-2007 23:25	84	26107	26107
01-Mar-2007 19:01	01-Mar-2007 20:41	6024	26148	26149
16-Mar-2007 17:50	16-Mar-2007 21:09	11935	26362	26364
18-Mar-2007 16:46	18-Mar-2007 18:24	5878	26390	26391
19-Mar-2007 16:19	19-Mar-2007 17:55	5761	26404	26405
24-Mar-2007 12:07	24-Mar-2007 13:46	5954	26473	26474
24-Mar-2007 13:46	24-Mar-2007 13:46	16	26474	26474
29-Mar-2007 12:48	29-Mar-2007 14:25	5830	26545	26546
02-Apr-2007 20:35	02-Apr-2007 21:46	4242	26607	26607
02-Mar-2007 05:48	02-Mar-2007 08:33	9861	26154	26156
04-Mar-2007 07:34	04-Mar-2007 09:15	6072	26184	26185
04-Mar-2007 19:07	04-Mar-2007 20:47	6005	26191	26192
05-Mar-2007 07:10	05-Mar-2007 08:38	5293	26198	26199
05-Mar-2007 15:17	05-Mar-2007 18:34	11818	26203	26205
06-Mar-2007 13:10	06-Mar-2007 14:48	5919	26216	26217
09-Mar-2007 18:10	09-Mar-2007 19:47	5844	26262	26263
16-Mar-2007 07:56	16-Mar-2007 09:38	6108	26356	26357

Table 4-1 ATS_NL_0P missing data during cycle 56

UTC Start	UTC Stop	Duration (s)	Orbit Start	Orbit End
15-Mar-2007 10:13	15-Mar-2007 11:48	5671	26343	26344
17-Mar-2007 12:27	17-Mar-2007 14:03	5776	26373	26374
17-Mar-2007 15:43	17-Mar-2007 17:18	5726	26375	26376
29-Mar-2007 11:12	29-Mar-2007 12:48	5741	26544	26545
30-Mar-2007 11:11	30-Mar-2007 12:16	3953	26558	26559
06-Mar-2007 18:07	06-Mar-2007 19:42	5683	26219	26220
09-Mar-2007 14:57	09-Mar-2007 16:29	5574	26260	26261
14-Mar-2007 14:00	14-Mar-2007 20:31	23462	26331	26335

Table 4-2 ATS_TOA_1P missing data during cycle 56

4.2.1 ORBITS AFFECTED BY POOR DATA QUALITY

The information reported in Section 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:

- 26126, 32/3, 35 (28th February 2007)
- 26197 (5th March 2007)
- 26388 (18th March 2007)
- 26555 (30th March 2007)

4.3 L0 and L1b Backlog Processing Status

Information on backlog processing was not available before publishing the report; it will be included in the report for Cycle 57.

5 DATA QUALITY CONTROL

5.1 Monitoring of Instrument Parameters

5.1.1 JITTER

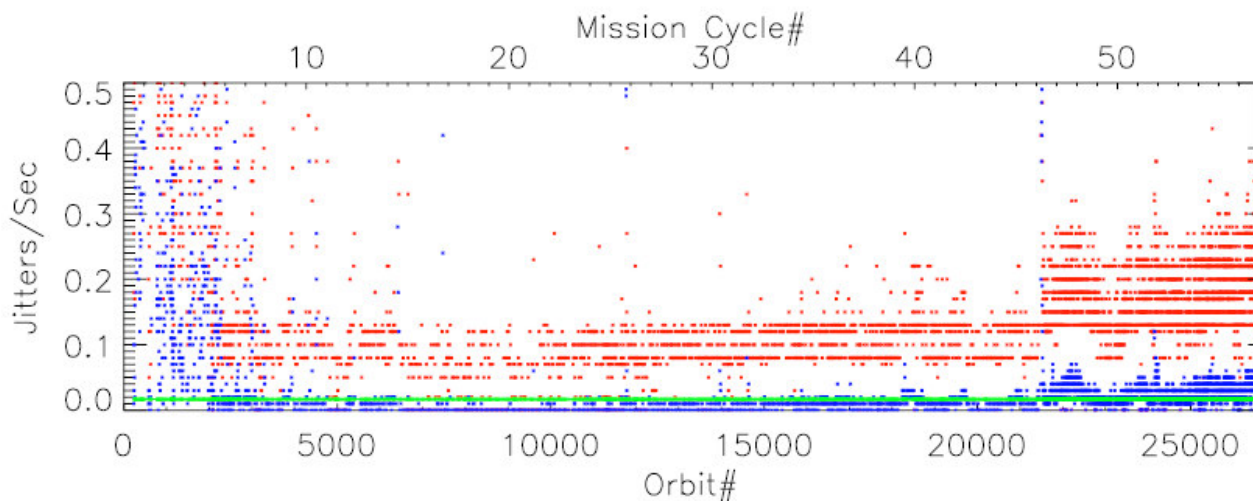


Figure 5-1 Jitter trend from mission start

The plot shows the jitter-trend since the start of the mission, against both orbit-number and cycle-number. The mean jitter-rate (per-orbit) is shown in blue and the maximum rate per orbit in red. The green horizontal line shows the nominal mean jitter-level achieved for

much of the mission. The mean jitter-rate over the last cycle continues to be well above the nominal level. There is no significant deterioration in image quality associated, but this is continually monitored.

5.1.2 SENSOR TEMPERATURE

While in measurement mode, all sensors maintained their nominal orbital and seasonal ranges in this cycle.

5.1.3 VISCAL

Reflectance channel calibration files are available for most days in these cycles, except:

- March 26 and 29

In addition, the following set of "orbit-by-orbit" VC1 files were delivered:

<http://aatsr2.ag.rl.ac.uk/data2/aatsr2/EDS-X/CyclePlots/VC1-56.txt>

5.1.4 NE Δ T

The NE Δ T information for this cycle shall be included in the report for Cycle #57.

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:

Closed – 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; a new OAR will be opened if the problem reoccurs.

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 55 composed from ATS_AR__2P 10' data is shown below in Figure 6-1. The monthly mean contains day time and night time data.

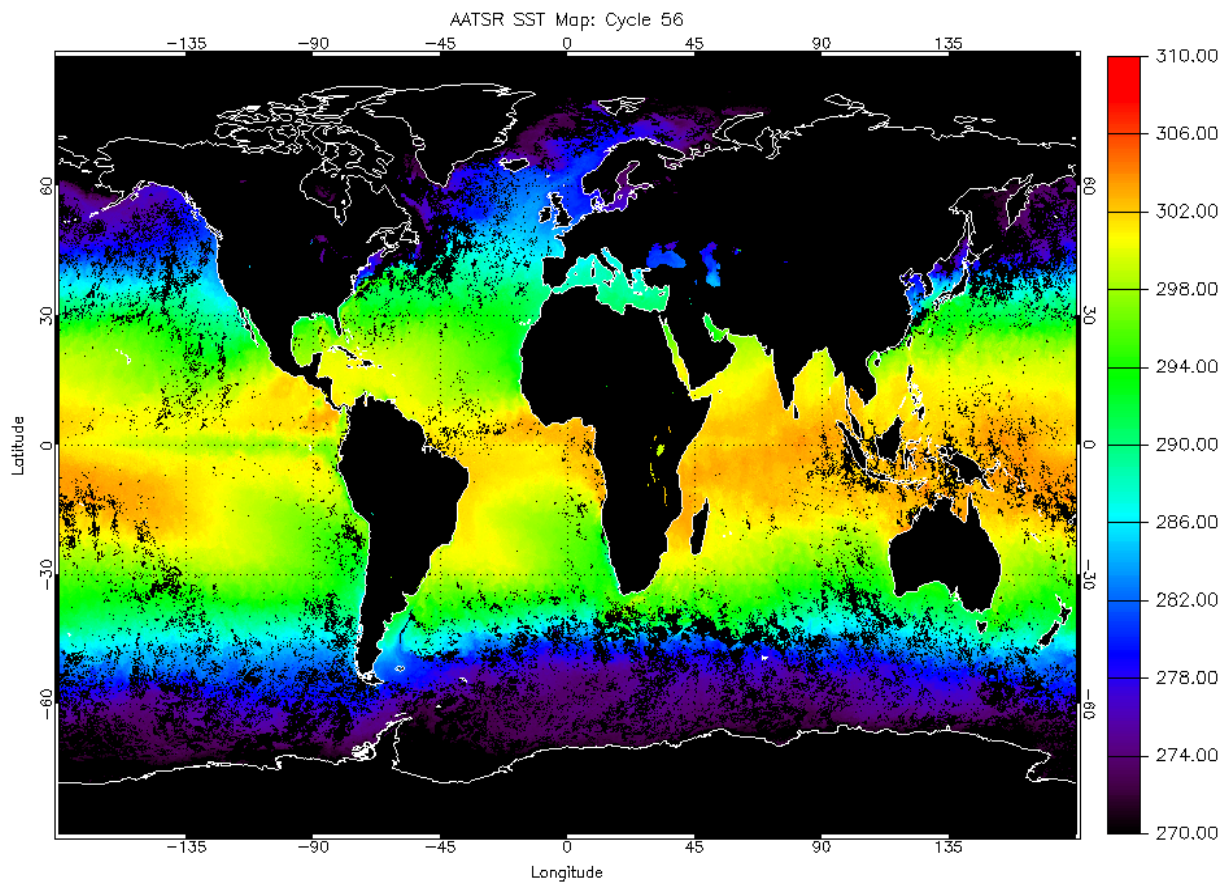


Figure 6-1 Monthly Global Average dual-view SST for Cycle 56.

The Met Office has validated the AATSR dual-view SST data using the global network of *in situ* buoy SST data, the results for Cycle 55 being shown in Figure 6-2. The updated SST coefficients released in December 2005 were used in the AATSR SST retrievals.

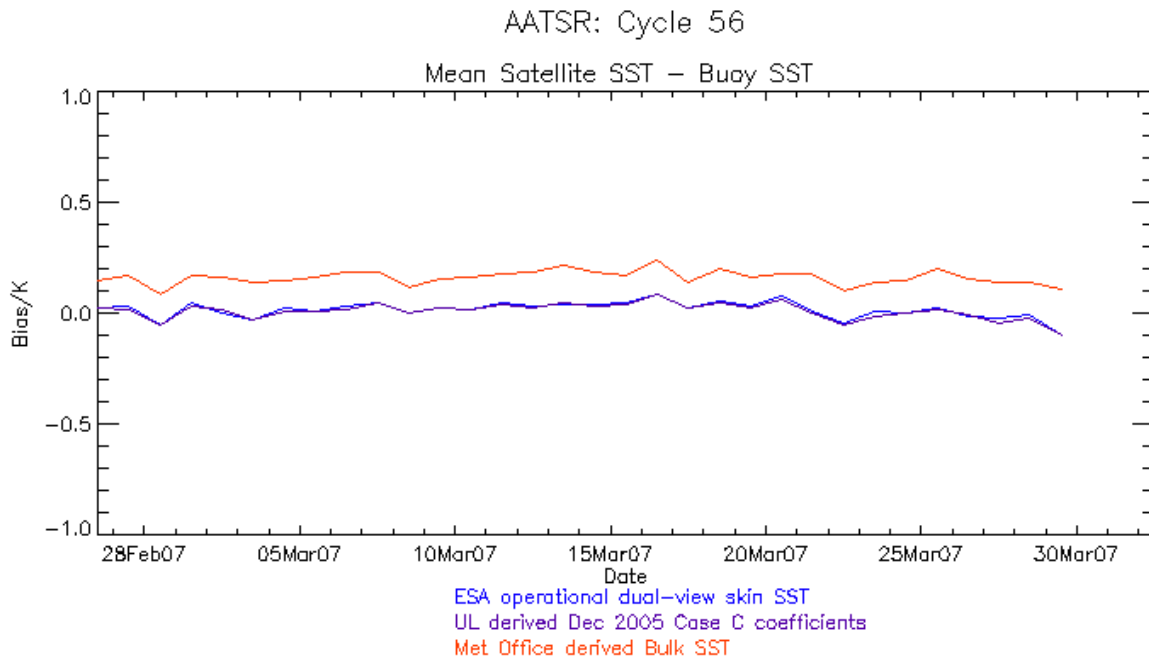


Figure 6-2: Comparison of daily mean difference between 10' AATSR SST values and in situ buoy SST for Cycle 56. Data provided by the Met Office.

During cycle 56, there were 1731 night time match-ups, with a mean (UL derived dual-view skin SST minus buoy SST) of -0.009 K, standard deviation 0.24 K, and a mean (dual-view bulk SST minus buoy SST) of +0.134 K, standard deviation 0.24 K. A total of 1669 daytime match-ups were found, with a mean (UL derived dual-view skin SST minus buoy SST) of +0.053 K, standard deviation 0.32 K, and a mean (dual-view bulk SST minus buoy SST) of +0.186 K, standard deviation 0.33 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.

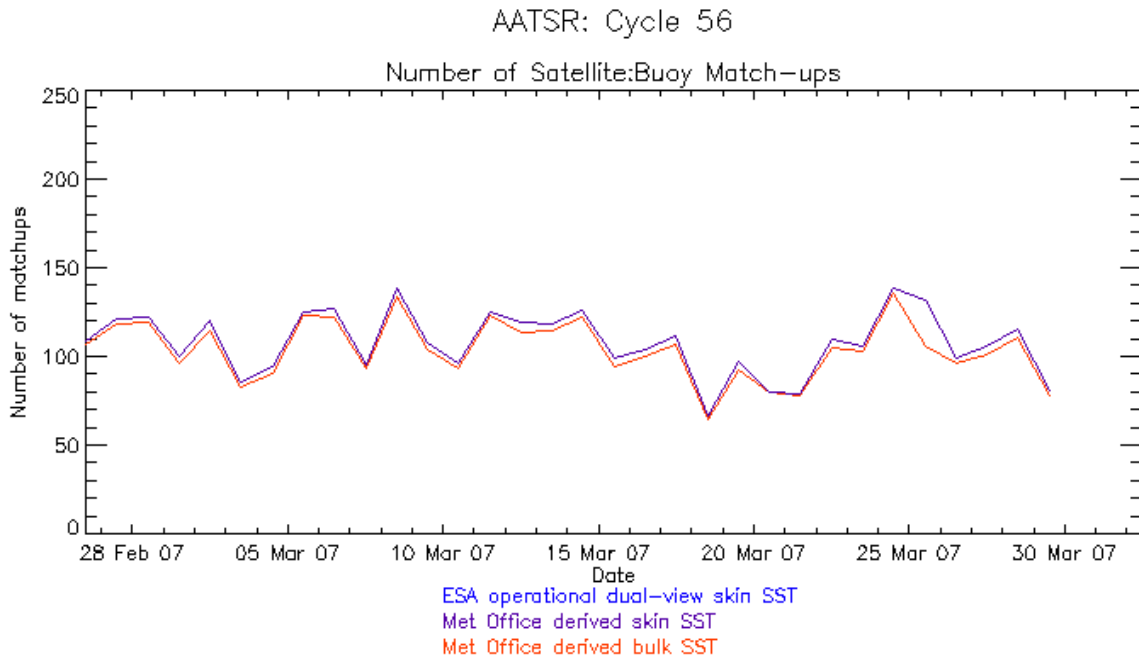


Figure 6-3 Plot of daily number of match-ups between 10' AATSR SST values and in situ buoy SST for Cycle 56. Data provided by the Met Office.

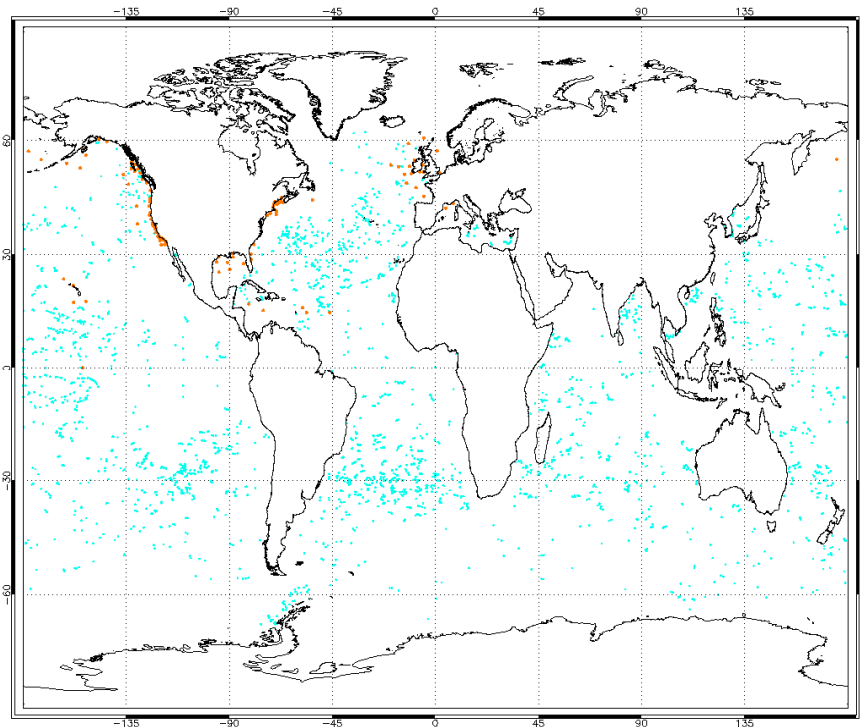


Figure 6-4 Map showing global distribution of match-ups between 10' AATSR SST values and in situ buoy SST for Cycle 56. The red dots indicate a match-ups to a moored buoy; the cyan dots indicate a match-up to a drifting buoy. Data provided by the Met Office.

7 DISCLAIMERS

No new disclaimers have been issued during this cycle.