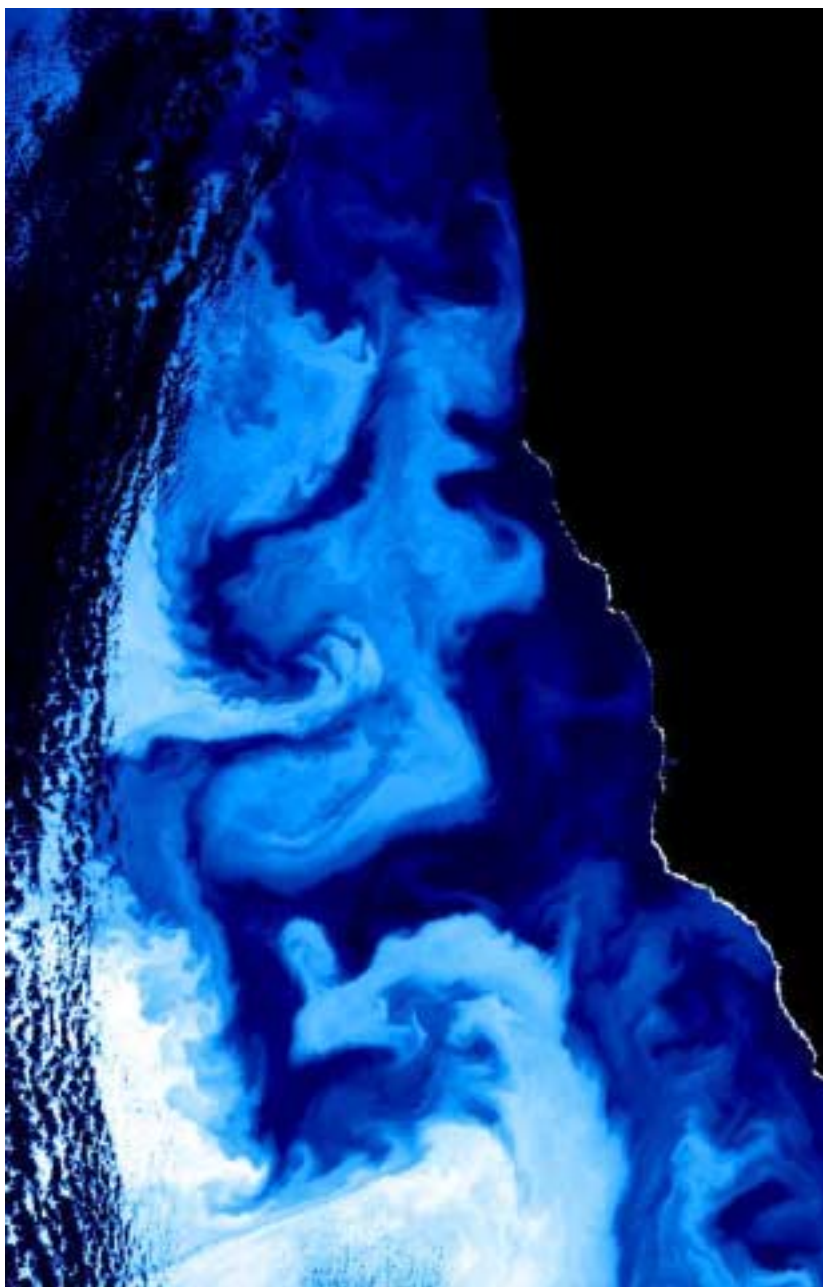


AATSR Cycle Report

Cycle # 21

20 October 2003, 21:59:29 orbit 8572
24 November 2003, 21:59:29 orbit 9072



This image shows fascinating sea surface temperature patterns off the western coast of the USA (California and Oregon) on November 12, 2003 during Envisat Orbit #8899. The sea surface temperature ranges from approximately 284 K to 288 K. The coolest water is blue/black in colour, the warmest is white, with increasing temperature represented by increasingly paler shades of blue. The land, to the right, is masked out and appears black, as does a band of cloud extending from top-to-bottom on the left hand side.

prepared by/ *préparé par* AATSR PCF team and QWG team

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1 THE CYCLIC REPORT #21

1.1 *Acronyms and abbreviations*

AATSR	Advanced Along Track Scanning Radiometer
CR	Cyclic Report
DMOP	Detailed Mission Operation Plan
DMS	Data Management System
EN-UNA-YYYY/#	Envisat Unavailability (plus year and number)
ESOC	European Space Operation Center
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/CNTR5-1.htm#eph.aatsr.glossary.acronabbr:nrt>

1.2 *Summary*

Cyclic number: 21

Cycle Start Time: 20-OCT-2003, 21:59:29 orbit stop: 8572

Cycle Stop Time: 24-NOV-2003, 21:59:29 orbit stop: 9072

The main activities during the cycle have been the following:

- **Processor L0 and IPF Version:** No changing in the version of AATSR processor for Level0 and in the IPF version for the Level1 and Level2
- **Visible calibration data:** The visible calibration coefficients data (ATS_VC1_AX) are changed regularly during the cycle. These VC1 files are being used within the time criteria set for NRT processing. Off-line data processing is expected to take place within 2 weeks of acquisition. When this is the case the VC1 file used should be +/- 1 day from the date of acquisition (i.e. within specification). If off-line data are generated before 2 weeks from acquisition, this may not be achieved.

- **Data Acquisition:** The data acquisition for the Level0 has been of 99.57% of the whole period, for the Level1 of the 94.94% of the whole period.
- **Calibration activities:** No further information on instrument calibration is reported. The current status of the instrument calibration can be found in Section 1.7.1 of Cyclic Report 20.
- **Validation activities:** A complete update on the status of the instrument validation can be found in Section 1.7.4 of Cyclic Report 20.

The comparison between the mean global SST and the data collected from a network of buoy SST values shows 720 match-up in total, with a mean of 0.010 K (ESA operational dual-view skin SST minus buoy SST), standard deviation 0.487 K, and a mean (dual-view bulk SST minus buoy SST) of 0.193 K, standard deviation 0.491 K.

1.3 Software version and Auxiliary files version

1.3.1 Software version

AATSR processor for Level0; version: PFHS/5.22

AATSR IPF for Level1 and Level2; version: AATSR/05.55

DOCUMENTATION Applicable: PO-RS-MDA-GS-2009 Is. 3 Rev. F

1.3.2 Auxiliary file version

This is the list of AATSR auxiliary files.

- ***Browse Product Look-up Data (ATS_BRW_AX)***
- ***L1b Characterization Data (ATS_CH1_AX)***
- ***Cloud Look-up Table Data (ATS_CL1_AX)***
- ***General Calibration Data (ATS_GC1_AX)***
- ***AATSR Instrument Data (ATS_INS_AX)***
- ***Visible Calibration Coefficients Data (ATS_VC1_AX)***
- ***Level1B Processing Configuration Data (ATS_PC1_AX)***
- ***Level2 Processing Configuration Data (ATS_PC2_AX)***
- ***SST Retrieval Coefficients Data (ATS_SST_AX)***

In this section will be reported the list of the auxiliary files changed in the cycle and for each file will be specified the date and the reason of the changing.

Will be also reported the list of the latest filename for every auxiliary file currently in use by the PDS.

Only the ATS_VC1_AX file is expected to change regularly. These VC1 files are being used within the time criteria set for NRT processing. Off-line data processing is expected to take place within 2 weeks of acquisition. When this is the case the VC1 file used should be +/- 1 day from the date of acquisition (i.e. within specification). If off-line data are generated before 2 weeks from acquisition, this may not be achieved. (1)

Product name	Start validity	Reason of changing
ATS_VC1_AXVIEC2003	October 21, 22, 23, 25, 30 November 5, 6, 7, 10, 13, 14, 17, 18, 19, 21, 24	(1)

Tab 1.3.2.1: Auxiliary files list changed during the period

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 ATS_VC1_AXVIEC20031124_153309_20031122_193602_20031129_193602 ATS_PC1_AXVIEC20030430_211727_20020301_000000_20070801_235959 ATS_PC2_AXVIEC20020123_074151_20020101_000000_20200101_000000 ATS_SST_AXVIEC20020123_074408_20020101_000000_20200101_000000

Tab 1.3.2.2: Latest auxiliary files currently in use by the PDS

1.4 PDS status

1.4.1 Instrument Unavailability

This is a summary of unavailability reports as communicated by ESOC during the period.

The AATSR has been in unavailability status since 28 October 2003 02:55:00.000 (day of year 301, orbit 8675, anx offset= 0823.991) to 28 October 2003 06:30:00.000 (day of year 301, orbit 8677, anx orbit = 1652.135).

The reason was instrument resumed MPS operations following the scheduled OCM

Start	Stop	Reason	Reference	Planned
28 October 2003 02:55:00.000	28 October 2003 06:30:00.000	Instrument resumed MPS operations following the scheduled OCM	EN-UNA 2003/0314 EN-UNA 2003/0316	YES

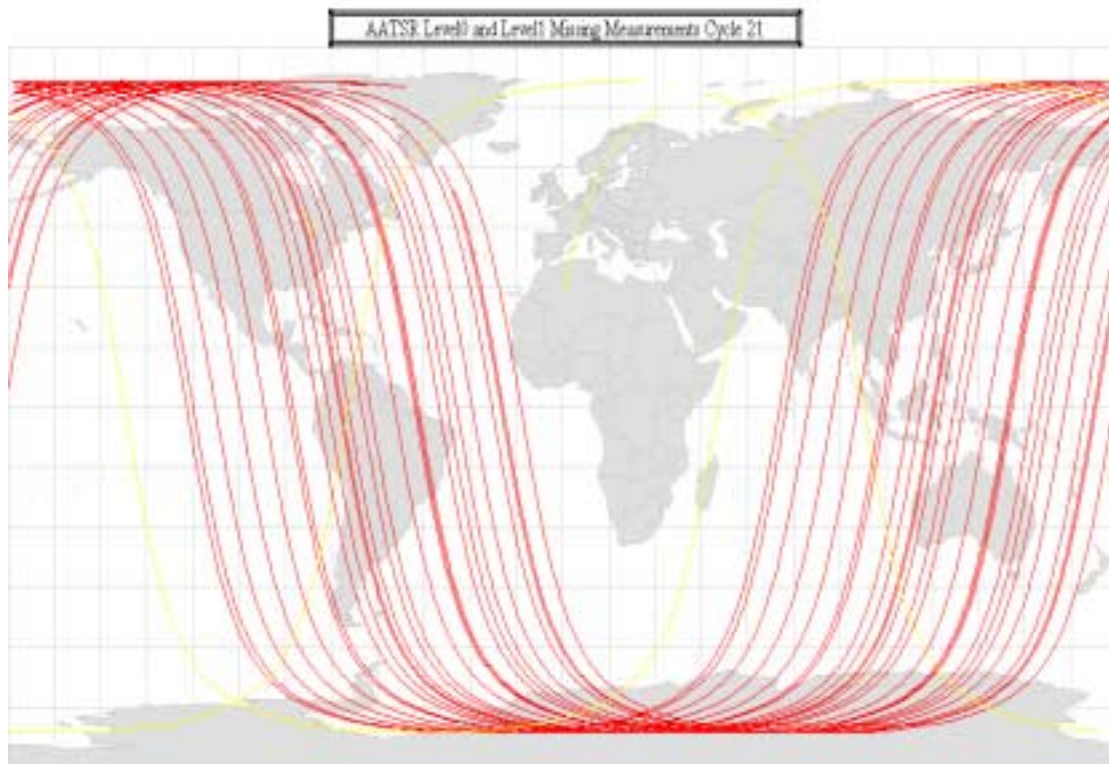
Tab 1.4.1: AATSR Unavailability during Cycle 21

1.4.2 Level0 data acquisition and Level1b processing status

In this chapter will be reported the Level0 missing and the data unavailability not planned in the period.

Only the Level1b data not processed starting from the corresponding Level0 will be reported.

The figure below shows the Level0 data missing measurements (yellow line) and the Level1 data not processed starting from the corresponding Level0 (red line).



*Figure 1.4.2.1: Missing measurements during cycle 21.
Yellow line: Level0 missing (unknown missing)
Red lines: Level1 missing*

The total number of missing data is equivalent to 2 orbits on 501 (0.43 %).
The Level0 data was available the 99.57% of the time during the cycle.
The Level1b data was available the 94.94% of the time during the cycle.
The following tables show the list of Level0 and Level1 lack of data.

UTC Start: start time of the missing acquisition.

UTC Stop: stop time of the missing acquisition.

Duration: duration of the missing acquisition.

Orbit Start: absolute orbit start of the missing acquisition.

Orbit Stop: absolute orbit stop of the missing acquisition.

UTC Start	UTC Stop	Duration (sec)	Orbit Start	Orbit Stop
26-OCT-03 14:13:03	26-OCT-03 15:51:20	5897	8653	8654
28-OCT-03 02:53:11	28-OCT-03 02:55:00	109	8675	8675
03-NOV-03 10:03:41	03-NOV-03 10:17:38	837	8765	8765
07-NOV-03 06:16:18	07-NOV-03 07:58:17	6119	8820	8821

Tab 1.4.2.1: ATS_NL__OP missing data during cycle 21

UTC Start	UTC Stop	Duration (sec)	Orbit Start	Orbit Stop
22-OCT-03 23:02:53	23-OCT-03 00:35:42	5569	8601	8602
27-OCT-03 22:03:18	27-OCT-03 23:36:58	5620	8672	8673
28-OCT-03 23:13:37	29-OCT-03 05:54:15	24038	8687	8691
29-OCT-03 22:42:10	30-OCT-03 05:23:16	24066	8701	8705
30-OCT-03 23:52:27	31-OCT-03 06:31:02	23915	8716	8720
31-OCT-03 21:36:56	31-OCT-03 23:17:22	6026	8729	8730
01-NOV-03 02:44:40	01-NOV-03 04:23:14	5914	8732	8733
02-NOV-03 22:15:12	03-NOV-03 01:37:01	12109	8758	8760
03-NOV-03 23:26:10	04-NOV-03 02:46:19	12009	8773	8775
09-NOV-03 01:51:12	09-NOV-03 03:24:41	5609	8846	8847
12-NOV-03 22:00:17	12-NOV-03 23:32:26	5529	8901	8902
13-NOV-03 01:25:04	13-NOV-03 02:58:19	5595	8903	8904
13-NOV-03 04:50:57	13-NOV-03 06:22:28	5491	8905	8906
18-NOV-03 23:55:35	19-NOV-03 03:10:04	11669	8988	8990

Tab 1.4.2.2: ATS_TOA_1P missing data during cycle 21

1.4.3 Level0 and Level1b backlog processing status

In this chapter a check with respect to the previous cycle is done to verify if the status of the missing data has changed after a backlog processing. In the following tables (showed only if a change whit respect the previous cycle has been detected) will be point out three kinds of missing products modified:

- Data gap cancelled: it refers to data gap that was identified in the previous report but hasn't now been detected as a result of backlog processing (red line).

- Duration change of data gap: it refers to data gap/s still exists but that it has got longer or shorter since the last report (green line).
- New data gap: it refers to data gap now filled as a result of a backlog processing (blue line).

The list of data missing during the previous cycle has not changed (see the list in the Cyclic Report #20).

1.5 Quality Control

1.5.1 Monitoring of parameters

JITTER:

The average scan-mirror jitter rate during this cycle was 0.01 jitters/sec or better, and on most days it was 0.00 jitters/sec. Note, however, that from around orbit #9000 to the end of the cycle, there were sporadic, short bursts of higher jitter rates observed - up to 0.15 jitters/sec. Users can check the jitter rate during the period covered by their products by checking the Scan Quality Annotation Data Sets (using EnviView, for example).

SENSOR TEMPERATURE:

All sensors maintained their nominal orbital and seasonal ranges.

VISCAL:

Reflectance channel calibration files (ATS_VC1_AX) are available for all days except 25, 27-31 October and 01, 03, 11, 22 November.

TOTAL NOISE:

Total noise in the thermal infrared channels, as represented by the standard deviation of the black-body signal in each channel, was nominal throughout the cycle.

NE Δ T:

Info unavailable.

1.5.2 Users Rejection

No user complaints during this cycle.

1.5.3 Software Problem Reporting. Potential impact

In this section will be described the SPR open with the potential impact on the data quality, and the SPR closed.

1.5.3.1 SPR open

In this section will be reported the list of SPRs.

1.5.3.1.1 Existing SPRS that are still open

No SPRs still opened.

1.5.3.1.2 New SPRs since the last Cyclic Report

None

1.5.3.2 SPR closed

The SPRs still opened (see Cyclic Report #19) have been corrected and they will be fixed in the next version of the processor, planned in early February 2004.

1.6 Calibration/Validation activities and results

1.6.1 Calibration

No further information on instrument calibration is reported. The current status of the instrument calibration can be found in Section 1.7.1 of Cyclic Report 20.

1.6.2 Validation

A complete update on the status of the instrument validation can be found in Section 1.7.4 of Cyclic Report 20.

A monthly mean global SST plot for November 2003, provided by the UK Met Office, corresponding to part of Cycle 21, is shown in Figure 1.6.2-1.

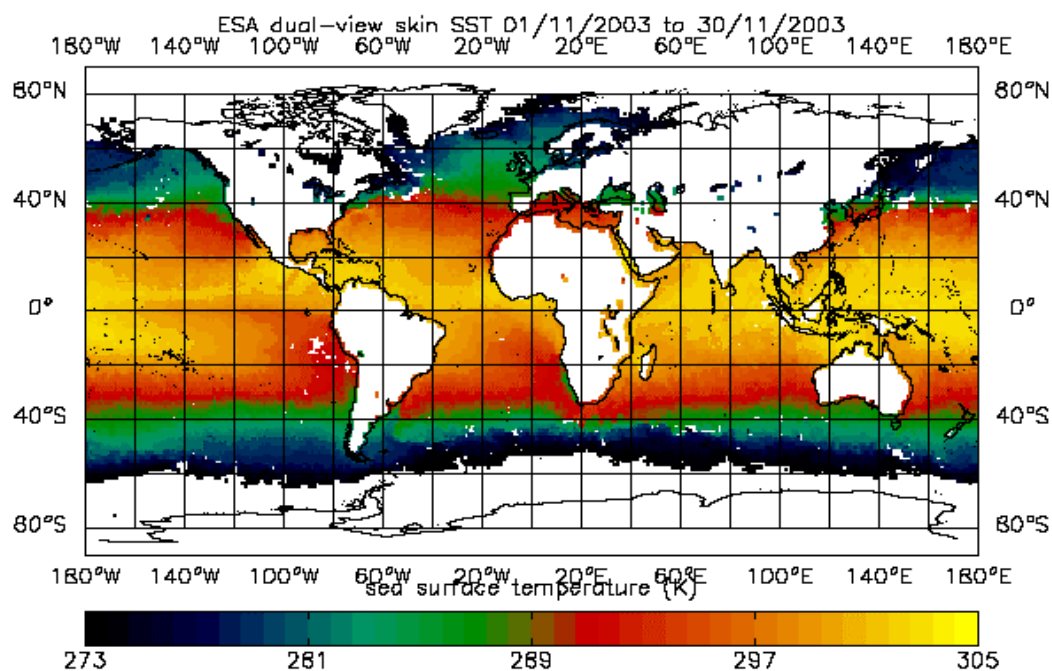


Figure 1.6.2-1: Monthly Global Average SST for November 2003. Image provided by the UK Met Office

Using the above data, the UK Met Office has done a comparison with data collected from a network of buoy SST values, the results for November 2003 being shown in Figure 1.6.2-2. In November 2003, there were 720 match-ups in total, with a mean (ESA operational dual-view skin SST minus buoy SST) of 0.010 K, standard deviation 0.487 K, and a mean (dual-view bulk SST minus buoy SST) of 0.193 K, standard deviation 0.491 K.

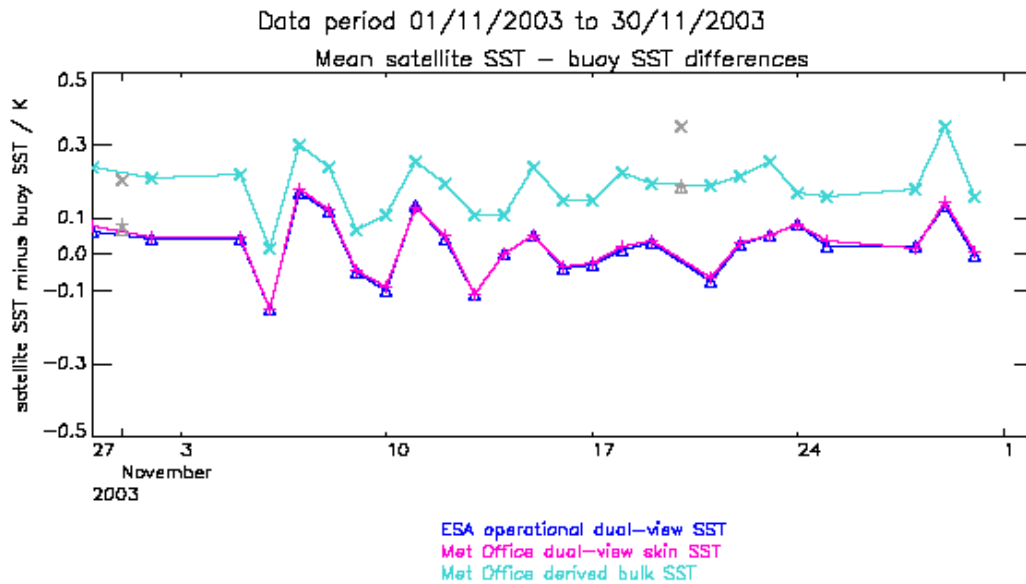


Figure 1.6.2-2: Comparison of daily mean difference between AATSR SST and buoy SST for November 2003. image provided by the UK Met Office.

1.7 General information

- ENVISAT/ERS Symposium will be held on 6 to 10 September 2004 in Salzburg, Austria. The symposium will be open to all interested parties, from scientists to operational users, and will cover both ENVISAT and ERS missions. Any information will be published on the ESA's web site: <http://envisat.esa.int>, ENVISAT/ERS Symposium.
- Following the installation of the new IPF (February 2004) a data reprocessing will be done since July 24th, 2002. The reprocessing will be done to include the new LST products (1 Km resolution) and to provide a better visible calibration status and a better nadir/forward collocation.
- The AATSR QWG will be held at RAL on March 4th, 2004.