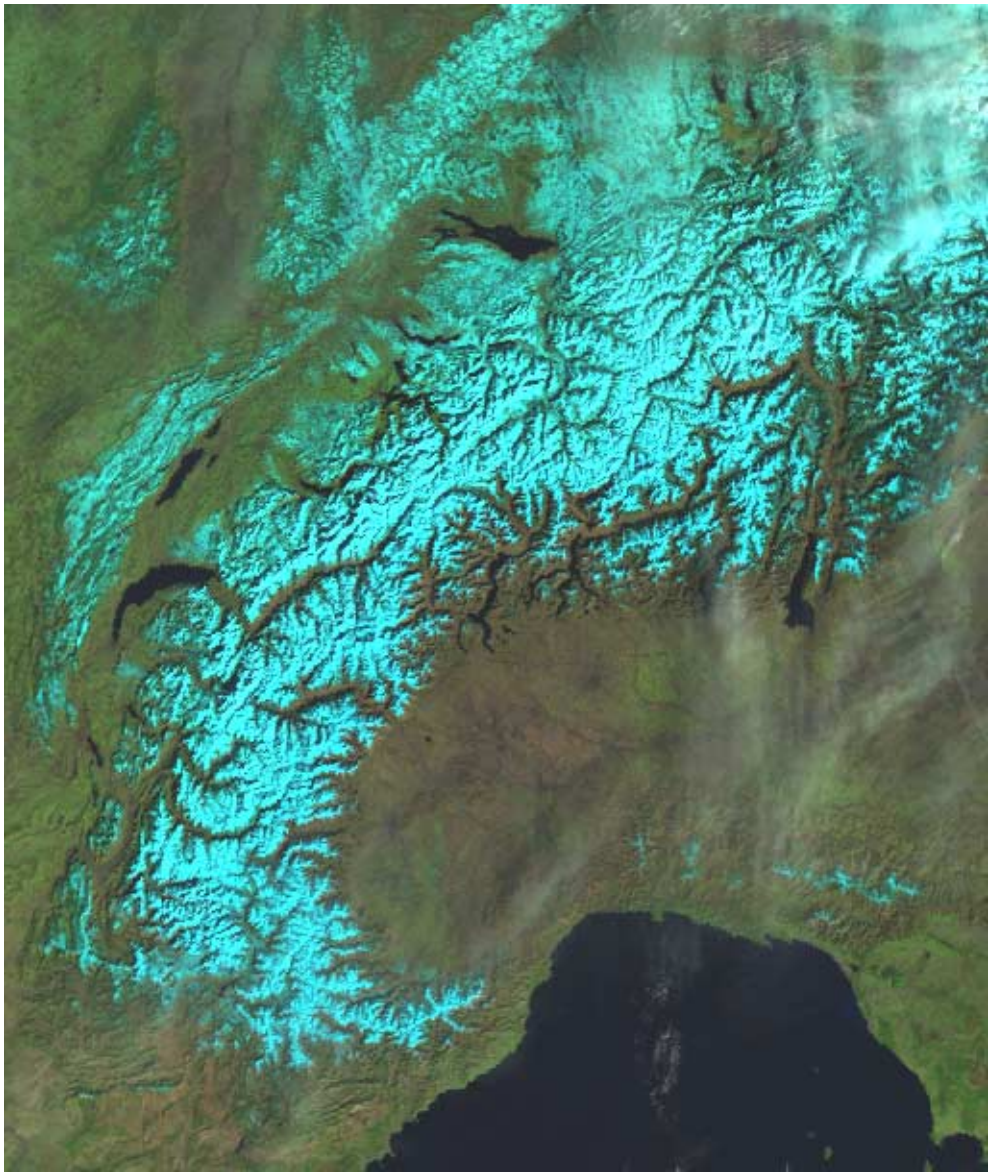
AATSR Cycle Report
Cycle # 24

02 February 2004, 21:59:29 orbit 10075
08 March 2004, 21:59:29 orbit 10575



The image covers large part of Alp mountains covered by snow from northeast to southwest, along the border between Italy and Austria, Switzerland, France. They can be visible the pre-alpine glacial lakes (from east to west: Garda, Como, Maggiore) in Italy and (from northeast to southwest: Costanza, Zurich, Lucerne, Thun, Neuchatel, Leman) in Switzerland.
The image was processed from data acquired by AATSR on February 10th, 2004 during the orbit 10182.
It is a daytime image obtained as colour composite from the 3 channels 1.6um, 0.87um, and 0.67um.

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1 THE CYCLIC REPORT #24

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: 24
Cycle Start Time: 02-FEB-2004, 21:59:29 orbit stop: 10075
Cycle Stop Time: 08-MAR-2004, 21:59:29 orbit stop: 10575

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 99.06% of the whole period, for the Level1 of the 99.03% of the whole period.

- **Calibration activities**: No further information is reported with respect to the previous cycle.
- **Validation activities**: A comparison with data collected from a network of buoy SST values has been done. In February 2004, there were 984 match-ups in total, with a mean (ESA operational dual-view skin SST minus buoy SST) of 0.036 K, standard deviation 0.518 K, and a mean (dual-view bulk SST minus buoy SST) of 0.194 K, standard deviation 0.504 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. H

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	February, 3, 5, 7, 9, 10, 11, 12, 13, 15, 18, 19, 20, 25 March, 3, 4, 5, 6, 7, 8	(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_AXVIEC20040308_155311_20040307_071555_20040314_071555
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

The AATSR has been switch-down since 04 February 2004 02:40:00.000 (day of year 035, orbit 10092, anx offset=0614.015) to 04 February 2004 08:03:00.000 (day of year 035, orbit 10095, anx orbit =1886.231), due to an Orbit Control Manoeuvre (OCM)

Start	Stop	Reason	Reference	Planned
04 Feb 2004 02:40:00.000	04 Feb 2004 08:03:00.000	OCM	EN-UNA-04-0050	YES

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) and the unavailability not planned (green line).

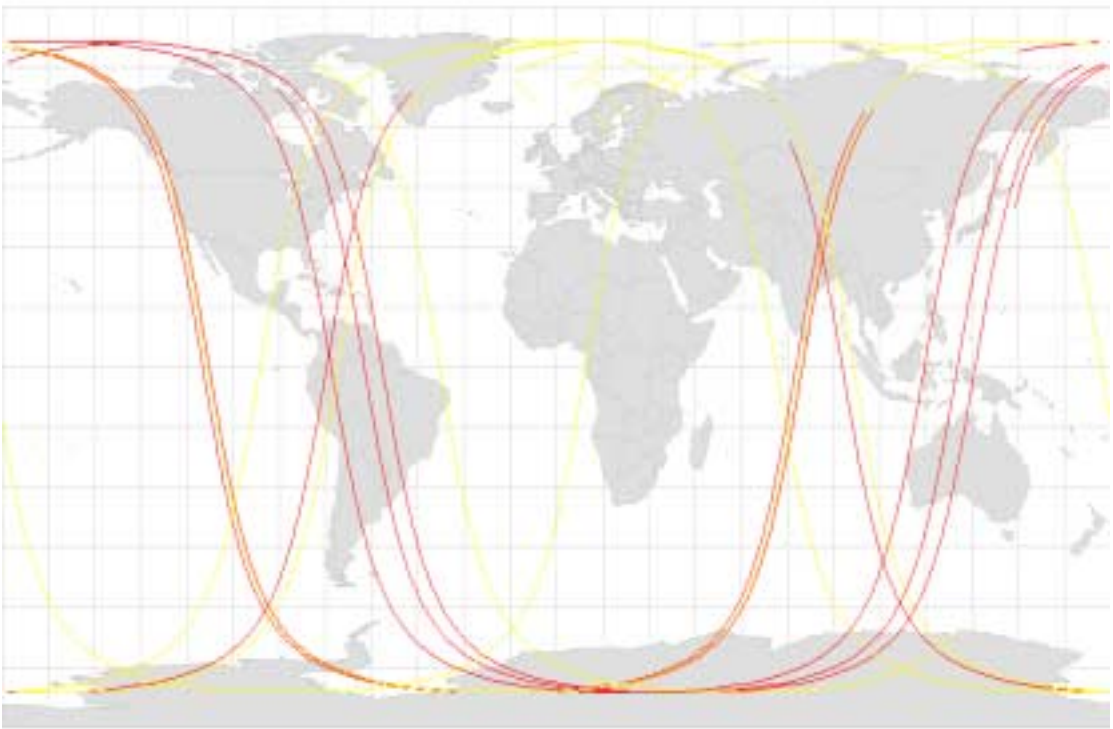

Figure 1.4.2.1: Missing measurements during cycle 24.
Yellow line: Level0 missing (PDS failure)
Red lines: Level1 missing

The total number of missing data is equivalent to 5 orbits on 501 (1%).
The Level0 data was available the 99.06% of the time during the cycle.
The Level1b data was available the 99.03% 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
11-FEB-04 14:18:37	11-FEB-04 17:33:52	11715	10199	10201
16-FEB-04 11:43:13	16-FEB-04 11:43:43	30	10269	10269
16-FEB-04 13:22:55	16-FEB-04 13:23:02	7	10270	10270
16-FEB-04 15:01:10	16-FEB-04 15:01:41	31	10271	10271
16-FEB-04 16:38:47	16-FEB-04 16:39:13	26	10272	10272
16-FEB-04 18:17:31	16-FEB-04 18:18:25	54	10273	10273
16-FEB-04 19:55:01	16-FEB-04 19:56:28	87	10274	10274
17-FEB-04 06:08:25	17-FEB-04 06:10:40	135	10280	10280
17-FEB-04 07:54:37	17-FEB-04 07:55:49	72	10281	10281
17-FEB-04 09:32:12	17-FEB-04 09:33:51	99	10282	10282
17-FEB-04 11:12:31	17-FEB-04 11:14:25	114	10283	10283
17-FEB-04 12:51:35	17-FEB-04 12:53:29	114	10284	10284
17-FEB-04 14:31:08	17-FEB-04 14:33:20	132	10285	10285
17-FEB-04 16:07:15	17-FEB-04 16:09:16	121	10286	10286
17-FEB-04 17:46:15	17-FEB-04 17:48:41	146	10287	10287
17-FEB-04 19:24:29	17-FEB-04 19:27:33	184	10288	10288
17-FEB-04 21:06:19	17-FEB-04 21:07:54	95	10289	10289
18-FEB-04 09:00:35	18-FEB-04 10:38:38	5883	10296	10297
29-FEB-04 23:59:56	01-MAR-04 00:53:33	3217	10462	10463
01-MAR-04 04:19:14	01-MAR-04 05:59:48	6034	10465	10466

Tab 1.4.2.1: ATS_NL__0P missing data during cycle 24

UTC Start	UTC Stop	Duration (sec)	Orbit Start	Orbit Stop
11-FEB-04 00:57:18	11-FEB-04 02:29:20	5522	10191	10192
11-FEB-04 04:21:58	11-FEB-04 05:54:09	5531	10193	10194
16-FEB-04 01:41:15	16-FEB-04 03:19:37	5902	10263	10264
28-FEB-04 00:19:49	28-FEB-04 00:33:19	810	10434	10434
04-MAR-04 04:30:45	04-MAR-04 06:02:45	5520	10508	10509
05-MAR-04 00:34:06	05-MAR-04 02:12:08	5882	10520	10521

Tab 1.4.2.2: ATS_TOA_1P missing data during cycle 24

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 #23).

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. Note that occasional, short duration jitter periods do occur. During this cycle a period of moderate jitter was noted during orbit #10087 on February 03 between 1920h and 2000h UTC. 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:

Owing to Level_0 data distribution problems via the DDS, reflectance channel calibration files (ATS_VC1_AX) are unavailable for the following days in this cycle:

In February - 05, 09, 15, 17, 18, 22, 23, 24, 25, 27, 28

In March - 01, 02, 03

Nominal viscal characteristics were observed throughout the cycle where data was available.

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.
Total noise in the reflectance channels was nominal throughout the cycle.

NE∆T:

Nominal throughout the cycle.

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 old SPRs have been corrected and they will be fixed in the next version of the processor, planned during March 2004.

1.6 Calibration/Validation activities and results

1.6.1 Calibration

No further information on instrument calibration is reported for Cycle 24. 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 February 2004, provided by the UK Met Office, corresponding to part of Cycle 24, is shown in Figure 1.6.2-1.

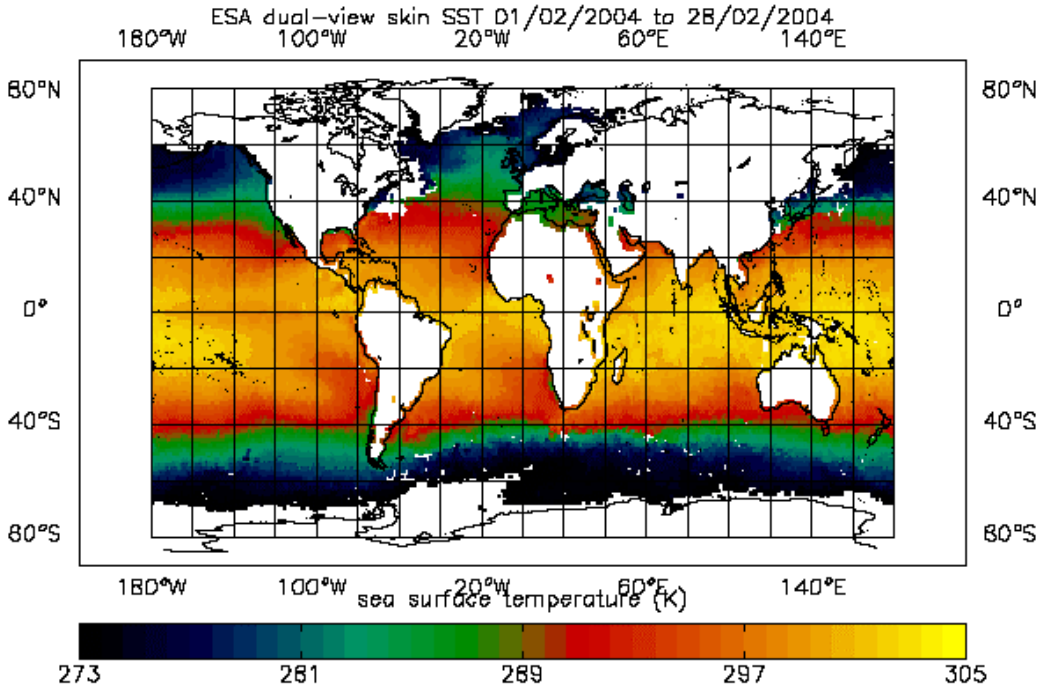

Figure 1.6.2-1: Monthly Global Average SST for February 2004. Image provided by the UK Met Office

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 February 2004 being shown in Figure 1.6.2-2. In February, there were 984 match-ups in total, with a mean (ESA operational dual-view skin SST minus buoy SST) of 0.036 K, standard deviation 0.518 K, and a mean (dual-view bulk SST minus buoy SST) of 0.194 K, standard deviation 0.504

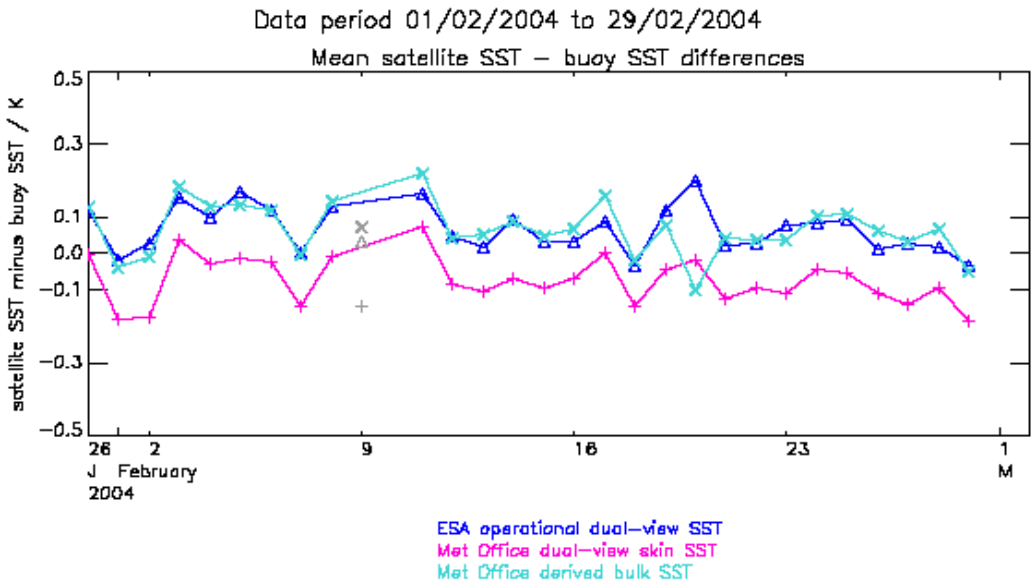

Figure 1.6.2-2: Comparison of daily mean difference between AATSR SST and buoy SST for February 2004. image provided by the UK Met Office.

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 (middle of March 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.