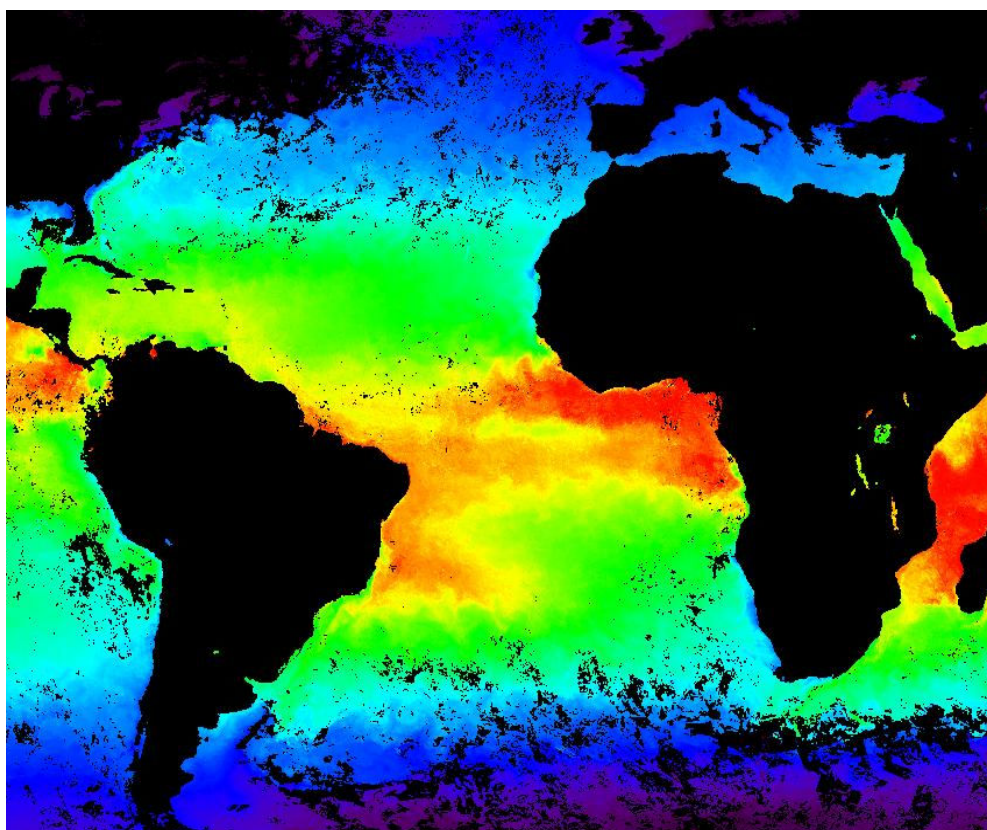


ENVISAT - AATSR

CYCLIC REPORT #88

	START	END
<i>DATE</i>	<i>22ND MARCH 2010</i>	<i>26TH APRIL 2010</i>
<i>TIME</i>	<i>21:59:29</i>	<i>21:59:29</i>
<i>ORBIT #</i>	<i>42138</i>	<i>42638</i>



Extract from a Level 3 product showing the monthly average Dual View Sea Surface Temperature from March 2010. Further details are available in section 5.4.

prepared by/ <i>préparé par</i>	AATSR IDEAS and QWG team
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C H A N G E L O G

reason for change / <i>raison du changement</i>	issue/ <i>issue</i>	revision/ <i>revision</i>	date/ <i>date</i>
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AATSR CYCLIC REPORT # 88

1 INTRODUCTION

The AATSR Cyclic Report is distributed by the AATSR IDEAS 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
EN-UNA-YYYY/#	Envisat Unavailability (plus year and number)
ESOC	European Space Operation Centre
HSM	High Speed Multiplexer
IDEAS	Instrument Data quality Evaluation and Analysis Service
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
RAL	Rutherford Appleton Laboratory
SPR	Software Problem Reporting
SSR	Solid State Recorder
SW	Software
VISCAL	Visible Calibration

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

2 SUMMARY

Cyclic Report: 88

Cycle Start: 22nd March 2010, 21:59:29 Orbit #: 42138

Cycle End: 26th April 2010, 21:59:29 Orbit #: 42638

The main activities during the cycle have been as follows:

- **AATSR Data Unavailability (All Levels)**

Envisat services were affected by the USV-2 launch on the 11/04/2010. No data was acquired for orbits 41412 – 42417.

- **Envisat Orbit Control Manoeuvre:**

An announcement was received was planned for an Envisat Orbit Control Manoeuvre (OCM), planned to take place on 26th April. The precise unavailability period will be provided in the next Cyclic Report (#89).

3 SOFTWARE & AUX FILE VERSION CONFIGURATION

3.1 Software Version

AATSR IPF for Level 1 and Level 2: Version 6.02L02

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_AXVIEC20070720_093530_20020301_000000_20200101_000000
ATS_CL1_AXNIEC20070223_102348_20010308_120446_20120801_235959
ATS_GC1_AXVIEC20070720_093834_20020301_000000_20200101_000000
ATS_INS_AXVIEC20070720_094014_20020301_000000_20200101_000000
See below for VC1 files
ATS_LST_AXVIEC20070720_094144_20020301_000001_20200101_000000
ATS_PC1_AXVIEC20070720_094312_20020301_000000_20200101_000000
ATS_PC2_AXVIEC20020123_074151_20020101_000000_20200101_000000
ATS_SST_AXVIEC20051205_102103_20020101_000000_20200101_000000

Table 1 Latest auxiliary files currently in use by the PDS

3.2.1 STATUS OF DAILY VISIBLE CALIBRATION FILES

3.2.1.1 *VCI File Availability*

The daily reflectance channel calibration files were available for all dates during this cycle.

3.2.2 STATUS OF OTHER AUXILIARY FILES

No auxiliary files changed 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
11/04/2010 01:11	11/04/2010 08:49	USV-2 Launch		Yes

Table 2 Instrument unavailability during cycle 88

4.2 L0 Data Acquisition and L1b Processing Status

#	Week Dates	Orbit		Availability (s)			Availability (%)		
		Start	Stop	Inst Unav	L0 gaps	L1 gaps	Instrument	L0	L1
1	March 22, 2010	41638	41737	0	0	0	100.00%	100.00%	100.00%
2	March 29, 2010	41738	41837	0	0	0	100.00%	100.00%	100.00%
3	April 5, 2010	41838	41938	27457	0	0	95.46%	95.46%	95.46%
4	April 12, 2010	41939	42038	0	0	0	100.00%	100.00%	100.00%
5	April 19, 2010	42039	42138	0	0	0	100.00%	100.00%	100.00%

Table 3 Instrument and data unavailability weekly summary for cycle 88

The instrument was available for 99.09% of the time during the cycle.

The L0 data were available for 99.09% of the time during the cycle.

The L1b data were available for 99.09% of the time during the cycle.

The following L0 data was missing from this cycle:

UTC Start	UTC Stop	Duration (s)	Orbit Start	Orbit End
11/04/2010 01:11	11/04/2010 08:49	27457	42412	42417

Table 4 ATS_NL__0P missing data during cycle 88

No L1 data was missing from this cycle that was not associated with the missing L0 data reported above.

4.2.1 ORBITS AFFECTED BY POOR DATA QUALITY

During this cycle, the following orbits contained frames suffering from bad/missing telemetry:

- 42165 (24th March 2010)

4.3 L0 and L1b Backlog Processing Status

There is no update available on the status of backlog processing.

5 DATA QUALITY CONTROL

5.1 *Monitoring of Instrument Parameters*

5.1.1 JITTER

Information on the jitter trend for AATSR Cycle 88 will be available in the next Cyclic Report.

5.1.2 SENSOR TEMPERATURE

Information on the detector temperature for AATSR Cycle 88 will be available in the next Cyclic Report.

5.1.3 VISCAL

Information on the NRT calibration quality for AATSR reflectance channels and the delivery of orbital VC1 files for Cycle 88 will be available in the next Cyclic Report.

5.1.4 NE Δ T

The NE Δ T results for AATSR Cycle 88 are currently unavailable and will be provided in the next Cyclic Report

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

The following SPRs are still open:

Inconsistent values in AST Confidence word, 17 and 50km cells

NA-PR-07-02946

The AST confidence word may be incorrectly set for records where the nadir or dual view SST retrieval was invalid, indicating that the 3.7 micron channel was used (although this has no meaning in this instance). Although the wrongly set flags may be ignored as far as the 17km cell is concerned, they present a problem since they may propagate into the confidence word for the 50km cell. The problem does not occur for daytime (descending) arcs where the retrievals are valid for both views.

Note: this PR has been migrated to a new PR (IDEAS-PR-09-04805) on the current Linux IPF version. A fix has been introduced to the IPF to resolve this issue and testing is currently underway to confirm the problem has been resolved.

AATSR Consolidated Products

NA-PR-08-03952

The AATSR Flight Operations and Data Plan (FODP), PO-PL-ESA-AT-0152, Issue 2 Revision 5 dated 22 November 2001 defines the meaning of "consolidated" in Appendix B.1 as follows: "... time-ordered, no overlap nor data gap except when the instrument is not operated ...", and for Level 0 there should be sufficient overlap only so that the higher level products can be chopped "... ANX to ANX ...". The FODP is part of the high level agreement between ESA and Defra and so can be taken as the definitive requirement for AATSR products.

Update to AATSR Child product generation requirements

NA-PR-08-04015

The 'Child Product Generation Requirements' on pages 520-521 of the document 'PDS Technical Specification for Maintenance and Evolution' (PO-RF-CSF-GS-20437) currently reads:

"For time extraction, for each data set in the parent product, the time stamp of the DSRs shall be compared to that of the requested start time (t0) segment. The first

DSR extracted from each data set to form the new child data set is the one with a time stamp immediately preceding or equal to t_0 . The last DSR extracted from each DS is the one immediately preceding t_1 ."

To ensure that a sufficient number of Auxiliary Data Set Records are present in AATSR child products, the requirement should be changed to read as follows:

"For time extraction, for each data set in the parent product, the time stamp of the DSRs shall be compared to that of the requested start time (t_0) segment. The first DSR extracted from each data set to form the new child data set is the one with a time stamp immediately preceding or equal to t_0 . The last DSR extracted from each DS is the one immediately preceding t_1 .

For AATSR data, the last ADS DSR extracted from each DS is the one whose time label is equal to or greater than t_1 provided such a DSR exists, otherwise the last ADS DSR in the product."

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

5.4 Monthly Level 3 Product

The following plots have been generated from the available Meteo products acquired in February and March 2010. This consists of 443 products taken from orbits 41424 to 41824 in February and 484 products taken from orbits 41825 to 42268 in March.

Figure 5-2, Figure 5-3, Figure 5-4 and Figure 5-5 show the SST average in dual and nadir views, the standard deviation and the number of contributory orbits for February 2010. Figure 5-6, Figure 5-7, Figure 5-8 and Figure 5-9 show the SST average in dual and nadir views, the standard deviation and the number of contributory orbits for March 2010. Please note we are not able to provide individual colour scales at this time, however the colouring scheme used is given in Figure 5-1 and the data ranges of each diagram are also given.



Figure 5-1 – This is the colour scheme used for the following plots, running linearly from left to right with increasing magnitude.

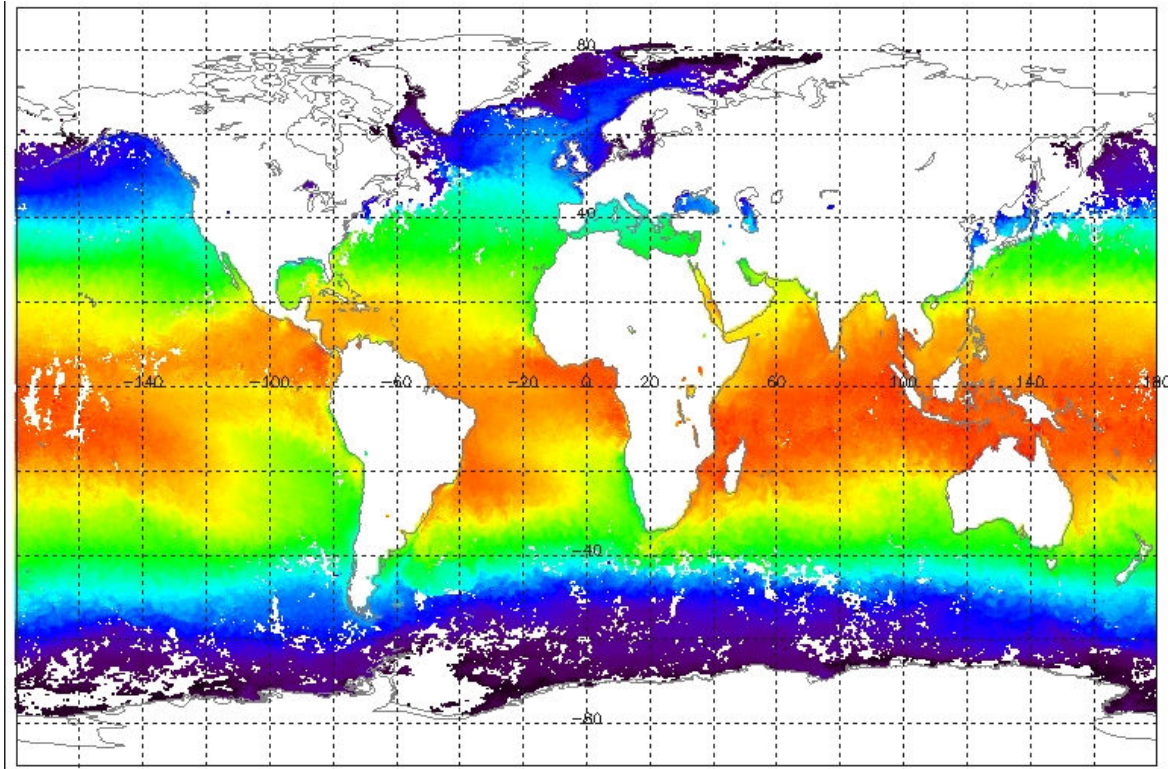


Figure 5-2 - This figure gives the monthly average Dual View SST, with a range of 270 - 305 Kelvin for February 2010

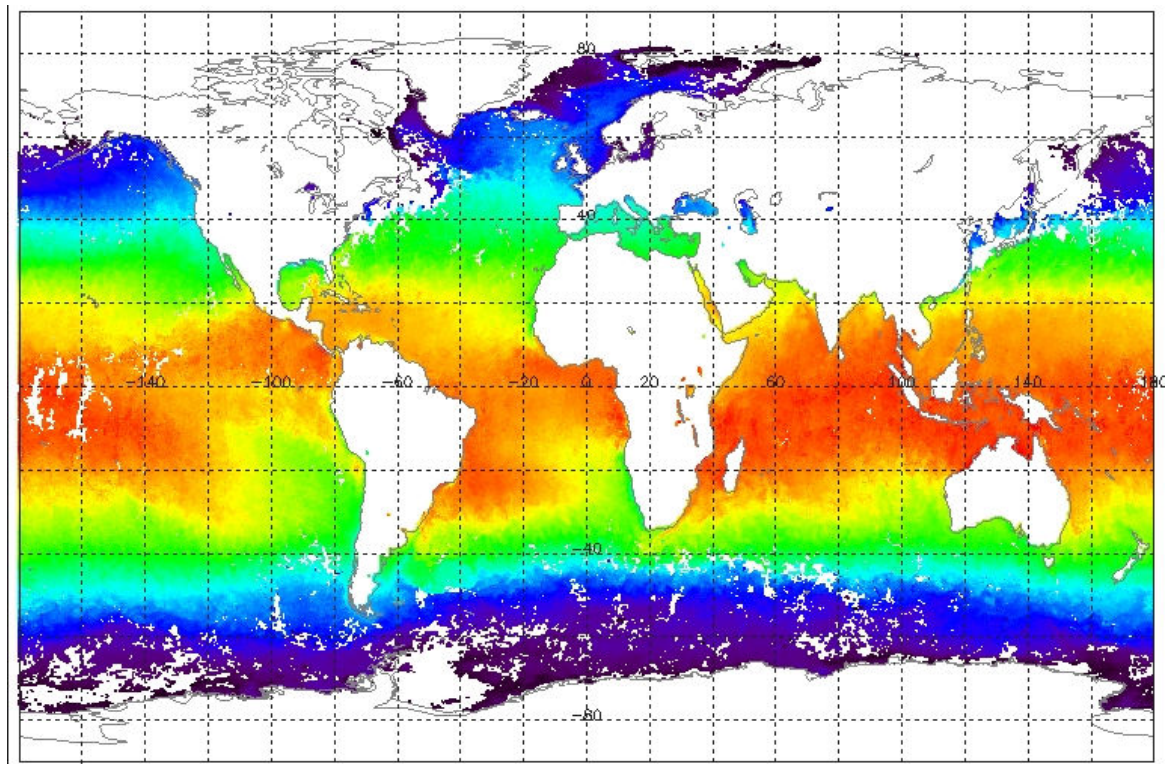


Figure 5-3 - This figure gives the monthly average Nadir SST, with a data range of 270 - 305 Kelvin for February 2010

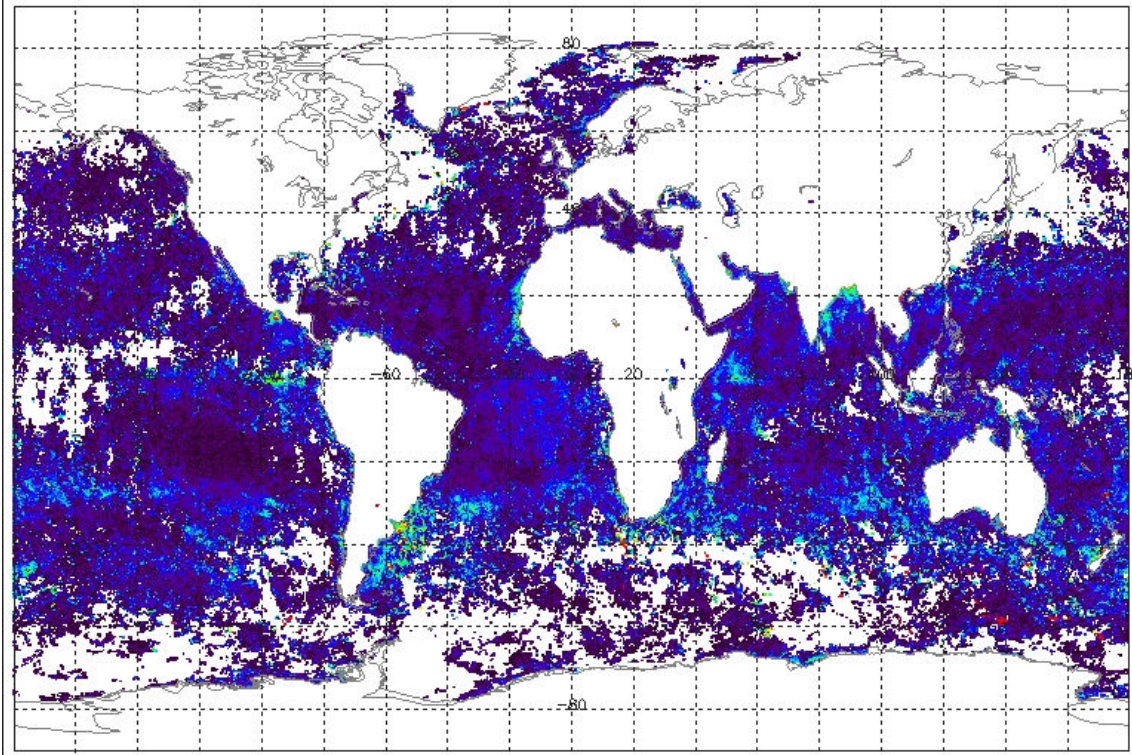


Figure 5-4 The standard deviation of the monthly average in SST with a data range of 0 to 2 Kelvin for February 2010

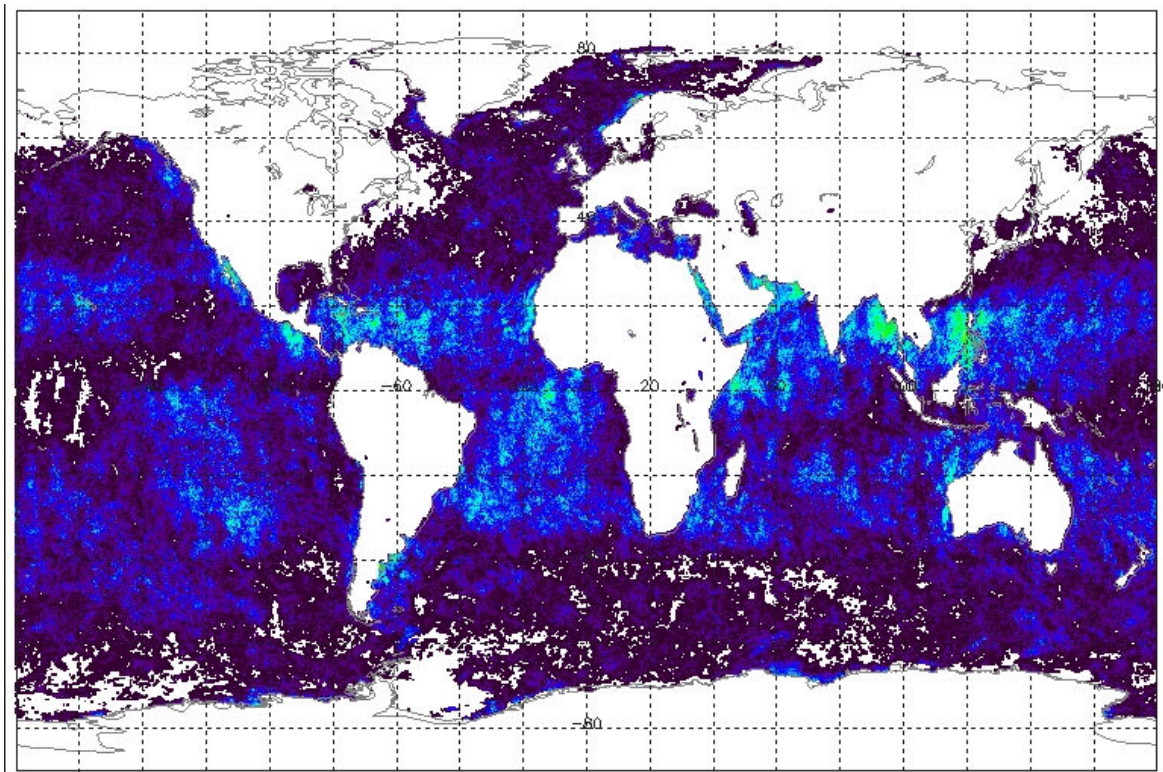


Figure 5-5 The number of contributory orbits to the calculation of the SST, with a range of 0 to 20 for February 2010

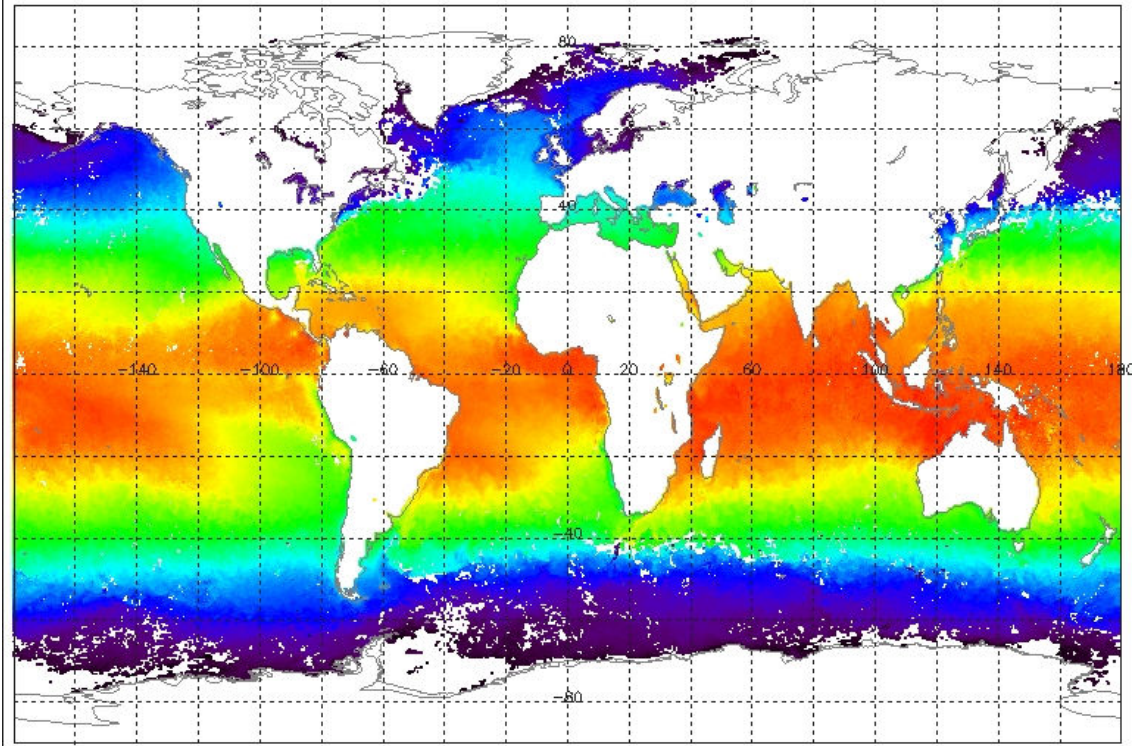


Figure 5-6 - This figure gives the monthly average Dual View SST, with a range of 270 - 305 Kelvin for March 2010

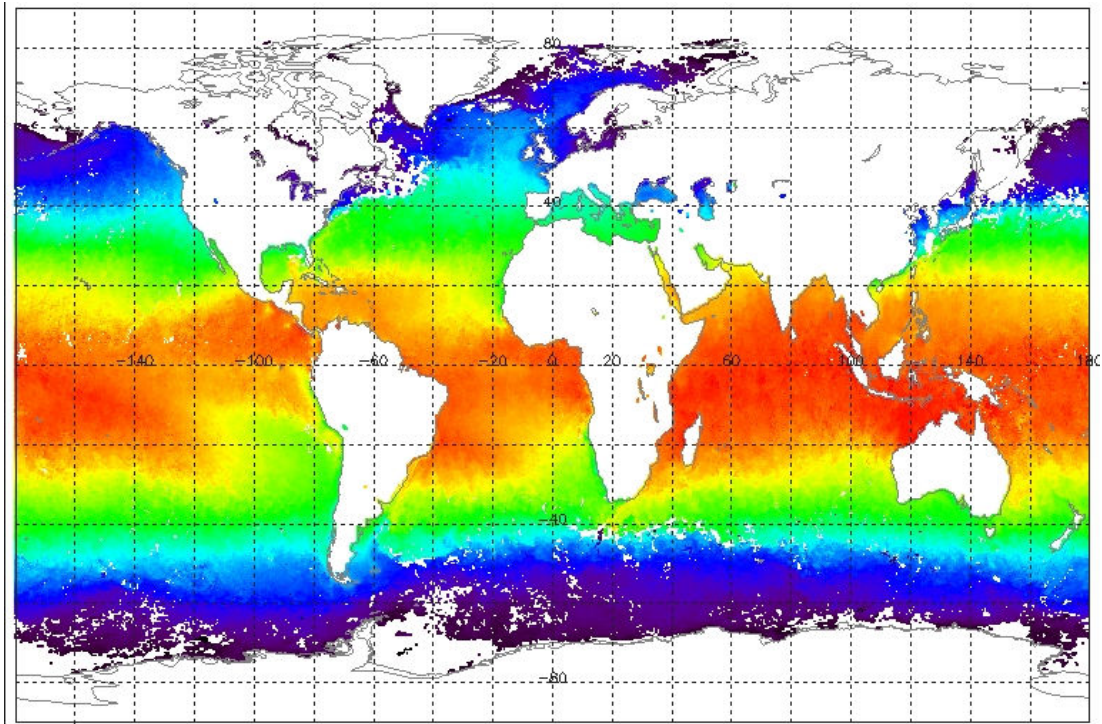


Figure 5-7 - This figure gives the monthly average Nadir SST, with a data range of 270 - 305 Kelvin for March 2010

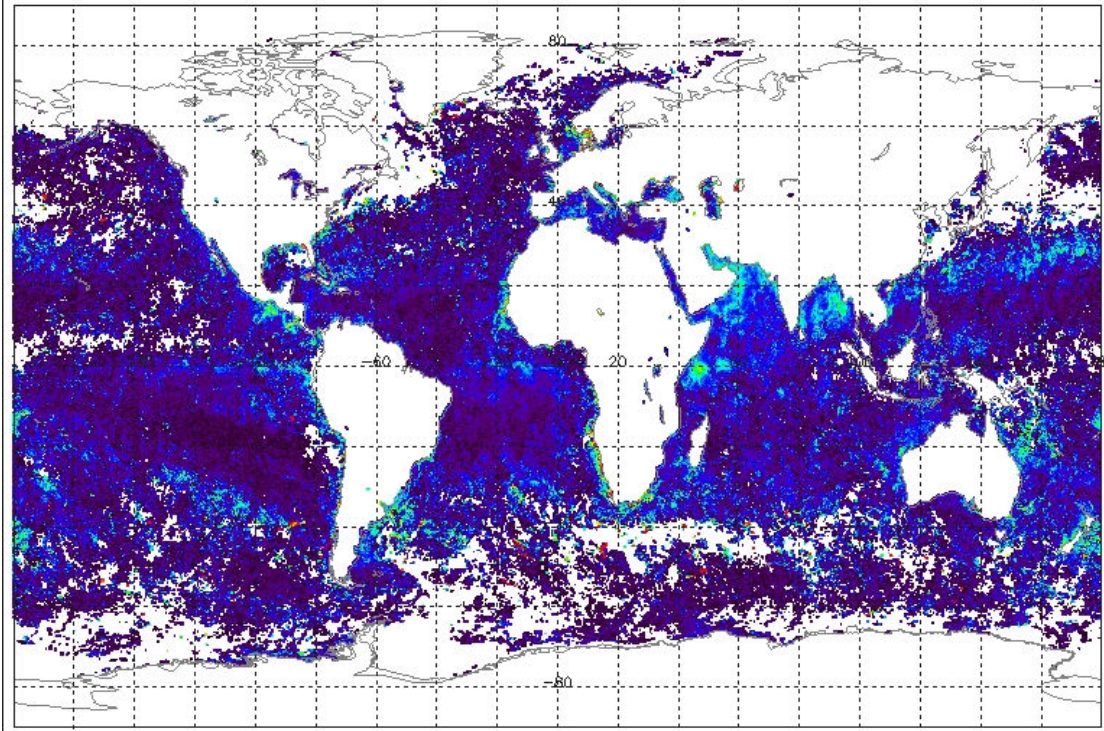


Figure 5-8 The standard deviation of the monthly average in SST with a data range of 0 to 2 Kelvin for March 2010

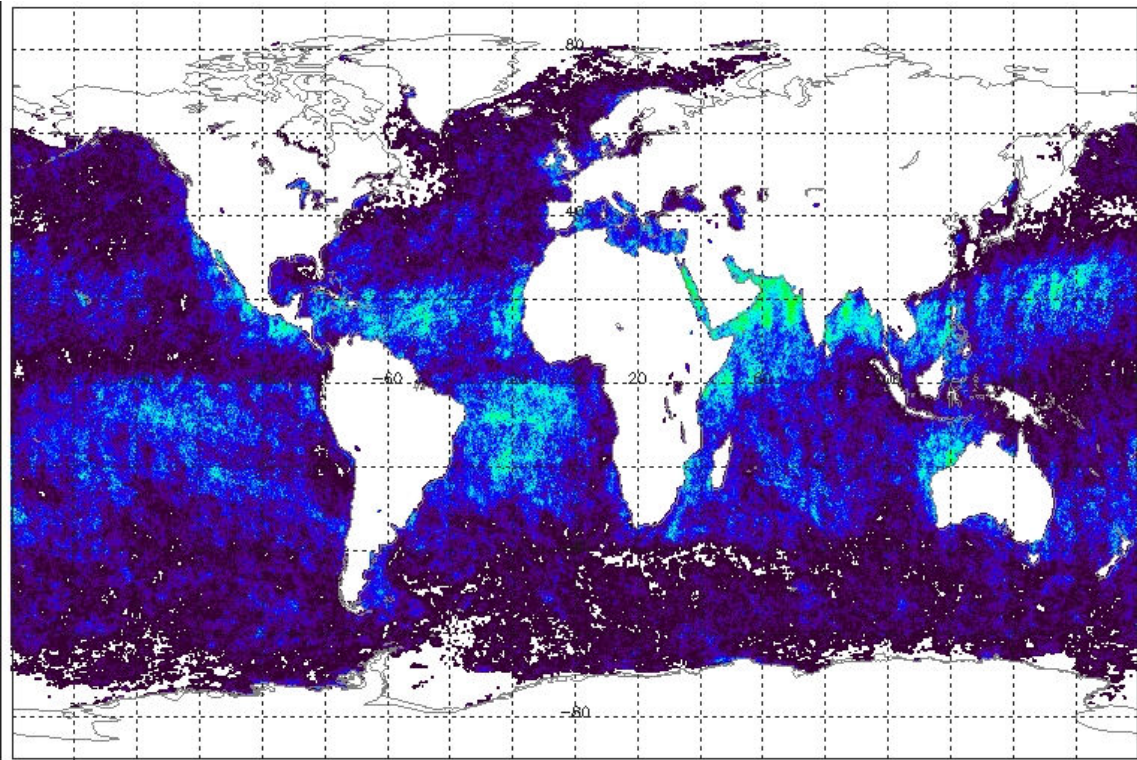


Figure 5-9 The number of contributory orbits to the calculation of the SST, with a range of 0 to 20 for March 2010

6 CALIBRATION/VALIDATION ACTIVITIES & RESULTS

6.1 Calibration

No calibration results were reported during this cycle.

6.2 Validation

The Met Office has validated the AATSR dual-view SST data using the global network of *in situ* drifting buoy SST data, the results for Cycle 88 being shown in Figure 6-1. The updated SST coefficients released in December 2005 were used in the AATSR SST retrievals.

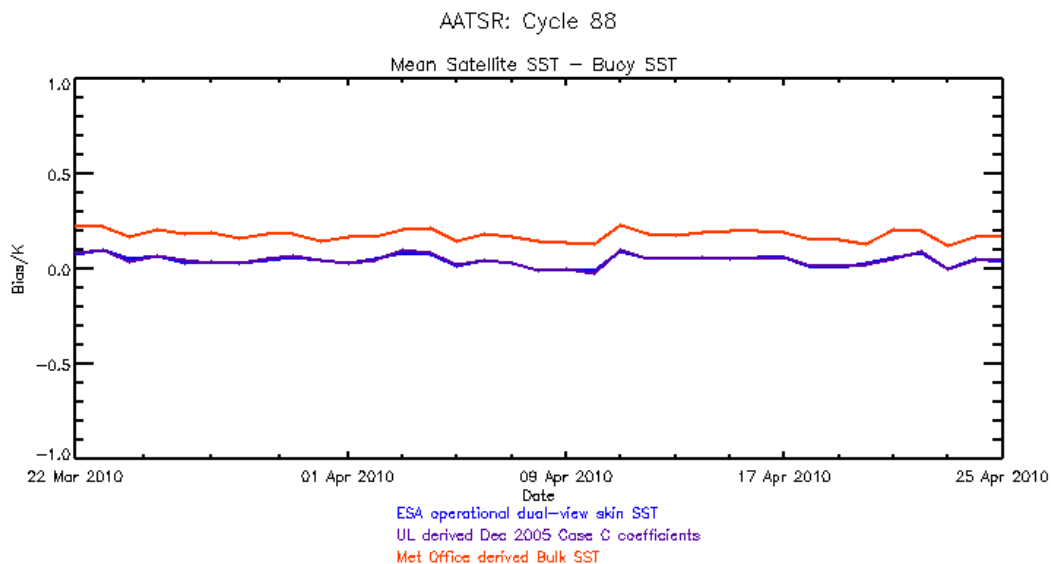


Figure 6-1 - Comparison of daily mean difference between 10' AATSR SST values and in situ drifting buoy SST for Cycle 88. Data provided by the Met Office.

During cycle 88, there were 1959 night time match-ups, with a mean (UL derived dual-view skin SST minus buoy SST) of +0.021 K, standard deviation 0.24 K, and a mean (dual-view bulk SST minus buoy SST) of +0.152 K, standard deviation 0.22 K. A total of 1760 daytime match-ups were found, with a mean (UL derived dual-view skin SST minus buoy SST) of +0.070 K, standard deviation 0.29 K, and a mean (dual-view bulk SST minus buoy SST) of +0.208 K, standard deviation 0.28 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.

A processing fault means validation data is not yet available for the entire cycle at the date this report is generated.

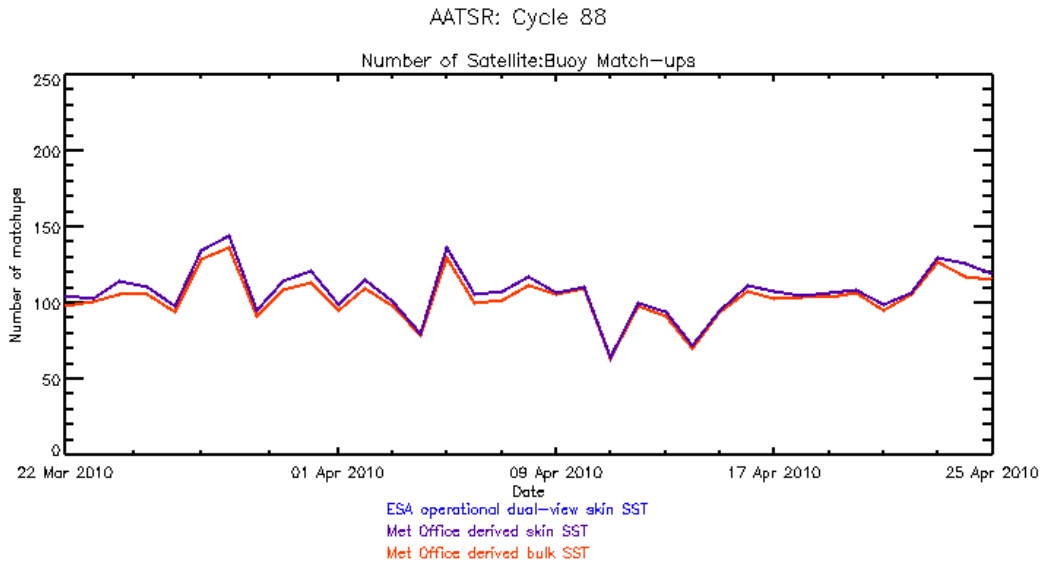


Figure 6-2 - Plot of daily number of match-ups between 10' AATSR SST values and in situ buoy SST for Cycle 88. Data provided by the Met Office.

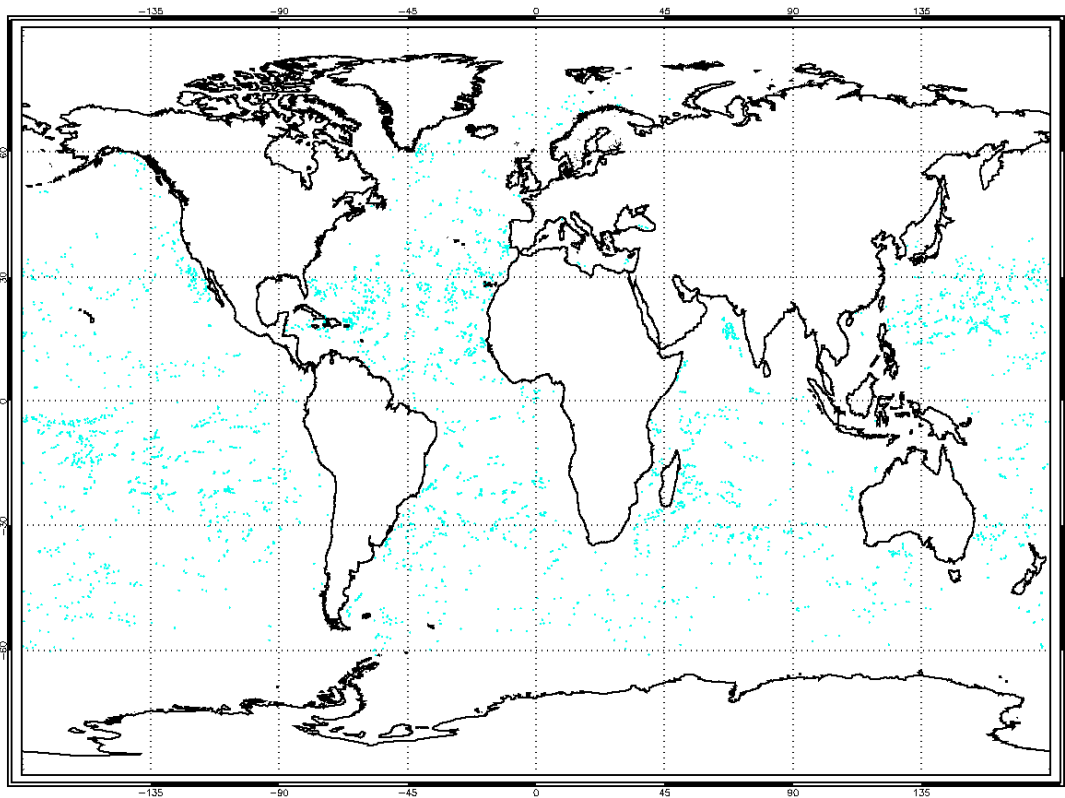


Figure 6-3 - Map showing global distribution of match-ups between 10' AATSR SST values and in situ buoy SST for Cycle 88. The cyan dots indicate a match-up to a drifting buoy. Data provided by the Met Office.

7 DISCLAIMERS

No new disclaimers have been issued during this cycle.