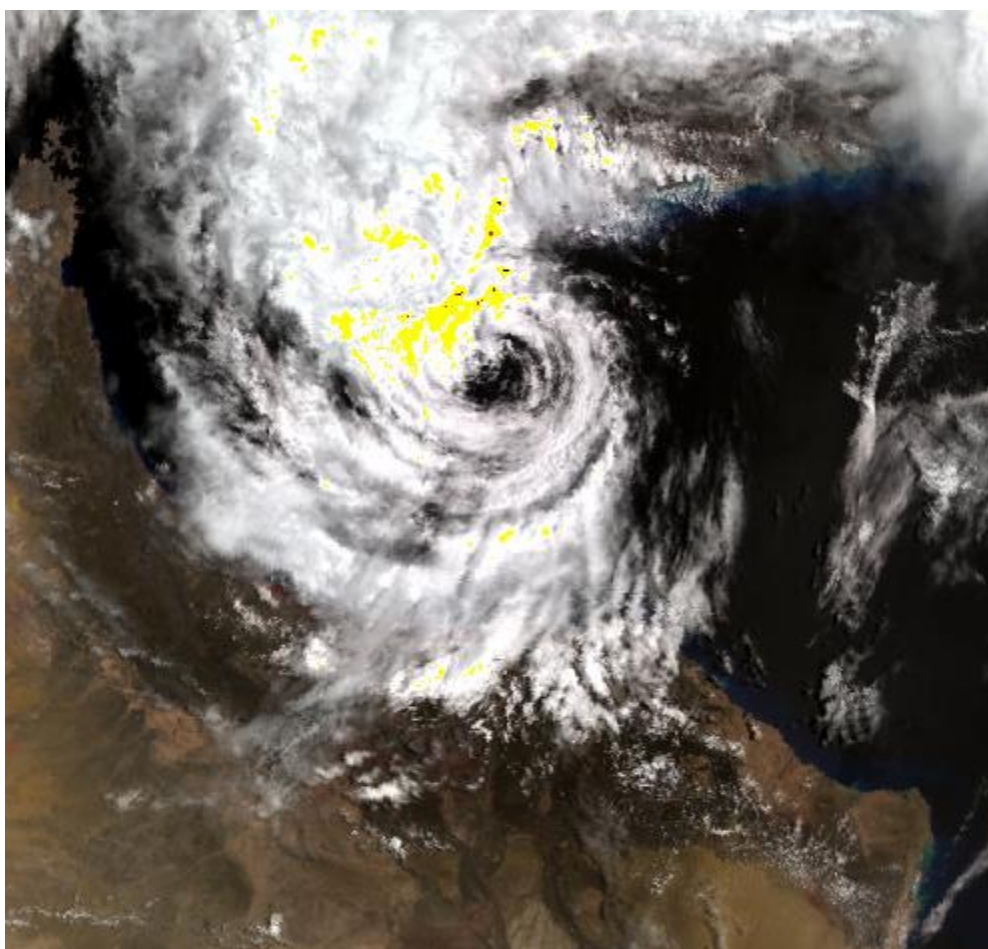


ENVISAT - AATSR

CYCLIC REPORT #58

	START	END
<i>DATE</i>	<i>07 MAY 2007</i>	<i>11 JUNE 2007</i>
<i>TIME</i>	<i>21:59:29</i>	<i>21:59:29</i>
<i>ORBIT #</i>	<i>27109</i>	<i>27609</i>



Cyclone Gonu, 07 June 2007 – This image was taken after the cyclone had passed over the Middle Eastern Sultanate of Oman. It is the strongest tropical cyclone to be recorded in this region since 1945.

<i>prepared by/préparé par</i>	AATSR DPQC and QWG team
<i>reference/référence</i>	
<i>issue/édition</i>	1
<i>revision/révision</i>	0
<i>date of issue/date d'édition</i>	25 Jun 2007
<i>status/état</i>	
<i>Document type/type de document</i>	Technical Note
<i>Distribution/distribution</i>	

A P P R O V A L

Title <i>titre</i>	AATSR Cyclic Report – Cycle 58	issue 1 <i>issue</i>	revision 0 <i>revision</i>
-----------------------	--------------------------------	-------------------------	-------------------------------

author <i>auteur</i>	Siân Procter	date <i>date</i>	25 Jun 2007
-------------------------	--------------	---------------------	-------------

approved by <i>approuvé par</i>		date <i>date</i>	
------------------------------------	--	---------------------	--

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>

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

Issue: 1 Revision: 0

reason for change/ <i>raison du changement</i>	page(s)/ <i>page(s)</i>	paragraph(s)/ <i>paragraph(s)</i>

T A B L E O F C O N T E N T S

AATSR CYCLIC REPORT # 58.....	1
1 INTRODUCTION	1
1.1 Acronyms and Abbreviations.....	1
2 SUMMARY	2
3 SOFTWARE & AUX FILE VERSION CONFIGURATION	3
3.1 Software Version	3
3.2 Auxiliary Files	3
3.2.1 Status of Daily Visible Calibration Files	4
3.2.1.1 VC1 File Availability	4
3.2.2 Status of other auxiliary Files	4
4 PDS STATUS.....	5
4.1 Instrument Unavailability	5
4.2 L0 Data Acquisition and L1b Processing Status	5
4.2.1 Orbits Affected by Poor Data Quality	6
4.3 L0 and L1b Backlog Processing Status	6
5 DATA QUALITY CONTROL	6
5.1 Monitoring of Instrument Parameters.....	6
5.1.1 Jitter	6
5.1.2 Sensor Temperature	7
5.1.3 Viscal	7
5.1.4 NE Δ T	7
5.2 User Rejections	7
5.3 Software Problem Reporting	7
5.3.1 Existing SPRs that are still open.....	7
5.3.2 New SPRs since the last cyclic report	7
5.3.3 Closed SPRs.....	7
6 CALIBRATION/VALIDATION ACTIVITIES & RESULTS	8
6.1 Calibration.....	8
6.2 Validation	8
6.2.1 Validation data from Cycle 57	10
7 DISCLAIMERS	13

AATSR CYCLIC REPORT # 58

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: 58
Cycle Start: 07 May 2007, 21:59:29, Orbit #: 27109
Cycle End: 11 June 2007, 21:59:29 Orbit #: 27609

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 (6.0)

- **Visible channel calibration:**

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

- **AATSR Outgassing:**

An instrument outgassing was performed between 18 May 2007 08:19:00 and 21 May 2007 11:49:33. During this period, no infrared data is available, the products will only contain the visible channels (0.86 μ m, 0.67 μ m and 0.56 μ m), and will be affected by poor calibration.

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:

- 19th, 20th, 21st May 2007 (Instrument outgassing)

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

- 19th, 20th, 21st May 2007 (Instrument outgassing)

3.2.2 STATUS OF OTHER AUXILIARY FILES

No other 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
18 May 2007 08:19:00	21 May 2007 11:49:33	AATSR Outgassing	EN-UNA-2007/0128	YES

Table 4-1 Instrument unavailability during cycle 58

4.2 L0 Data Acquisition and L1b Processing Status

The L0 data were available for 98.73% of the time during the cycle.

The L1b data were available for 98.35% 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 4-3 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
13-May-2007 09:15	13-May-2007 10:53	5885	27187	27188
18-May-2007 08:17	18-May-2007 08:19	107	27258	27258
22-May-2007 23:57	23-May-2007 01:06	4158	27324	27325
23-May-2007 04:54	23-May-2007 04:54	4	27327	27327
23-May-2007 04:54	23-May-2007 06:08	4444	27327	27328
23-May-2007 01:06	23-May-2007 02:49	6137	27325	27326
23-May-2007 06:08	23-May-2007 06:10	158	27328	27328
18-May-2007 08:19	18-May-2007 09:58	5977	27258	27259
21-May-2007 02:37	21-May-2007 03:25	2866	27297	27298
21-May-2007 05:08	21-May-2007 06:24	4550	27299	27300
21-May-2007 07:18	21-May-2007 08:26	4063	27300	27301

Table 4-2 ATS_NL__OP missing data during cycle 58

UTC Start	UTC Stop	Duration (s)	Orbit Start	Orbit End
10-May-2007 04:43	10-May-2007 06:19	5755	27141	27142
17-May-2007 08:52	17-May-2007 10:29	5831	27244	27245

Table 4-3 ATS_TOA_1P missing data during cycle 58

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.

During this cycle, no orbits contained frames suffering from bad/missing telemetry.

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

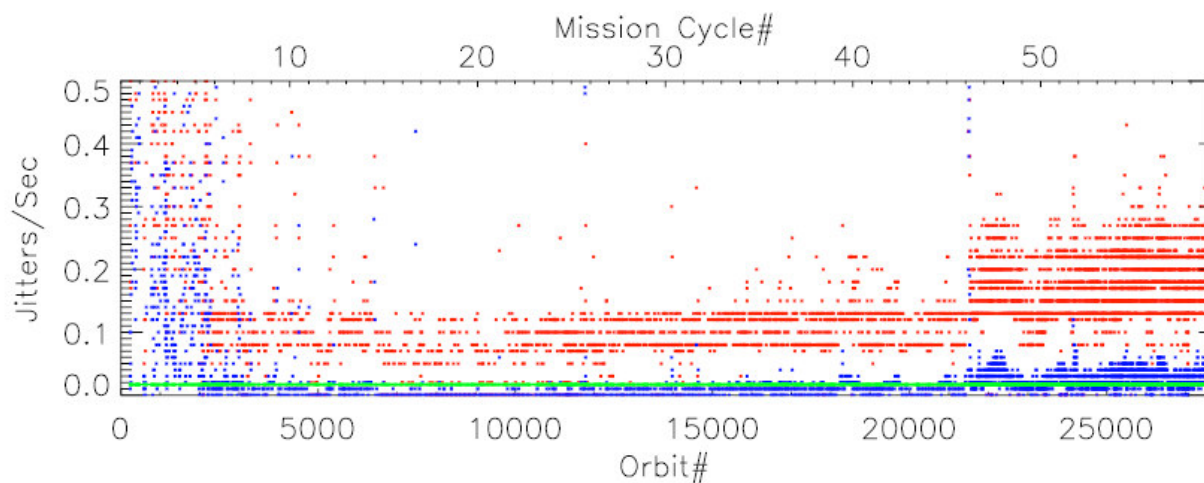


Figure 5-1 Jitter trend from mission start

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 shows a little deterioration compared to recent cycles, and continues to be 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:

- May 19, 20, 21 (Instrument outgassing)

In addition, the following set of “orbit-by-orbit” VC1 files was delivered:

<http://aatsr2.ag.rl.ac.uk/data2/aatsr2/EDS-X/CyclePlots/VC1-58.txt>

5.1.4 NE Δ T

	Hot BB T = 302.17K		Cold BB T = 263.75K	
	Count	NE Δ T (mK)	Count	NE Δ T (mK)
12 μ m	1.61	33.4	1.22	35.1
11 μ m	1.55	31.3	1.13	33.6
3.7 μ m	2.52	31.7	1.21	74.2

Table 5-1 NE Δ T data for Cycle 58

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 existing SPRs are still open:

Missing Viscal GADS in AATSR Consolidated L1B products (OAR-2831):

Open – Inspection has revealed that Viscal GADS are absent in all consolidated L1B products, regardless of whether or not they are present in the corresponding NRT data. To be corrected with a patch to the IPF.

5.3.2 NEW SPRS SINCE THE LAST CYCLIC REPORT

No SPRs have been opened since the last Cyclic Report.

5.3.3 CLOSED SPRS

No 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 58 composed from ATS_AR__2P 10' data is shown below in Figure 6-1. The monthly mean contains day time and night time data.

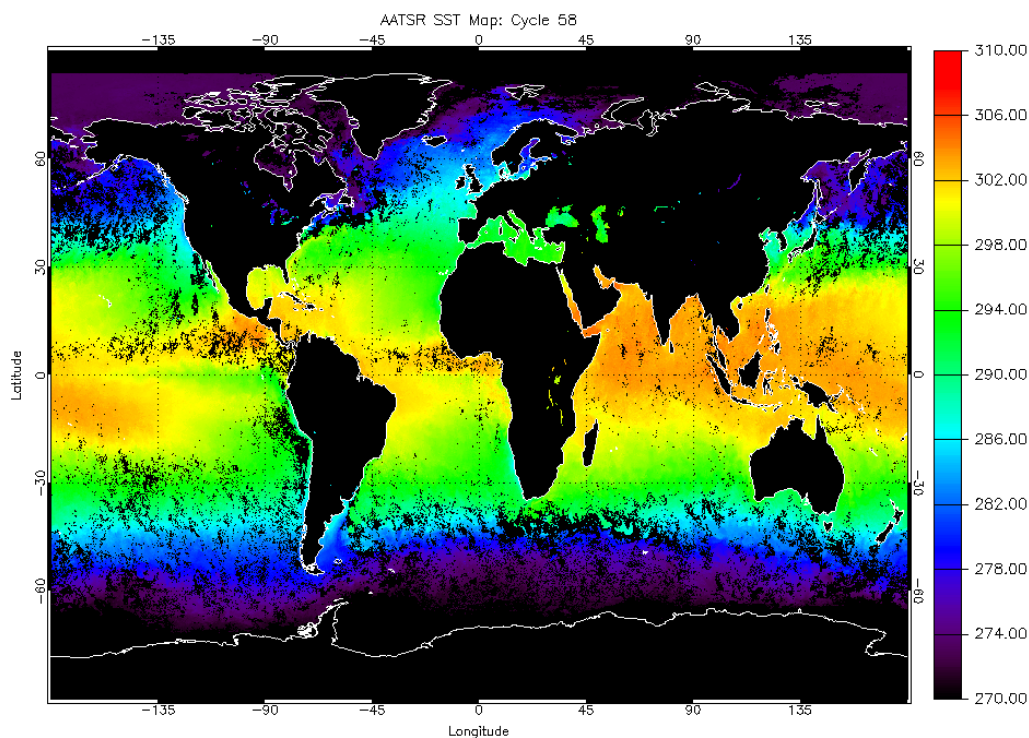


Figure 6-1 Monthly Global Average dual-view SST for Cycle 58.

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 58 being shown in Figure 6-2. The updated SST coefficients released in December 2005 were used in the AATSR SST retrievals.

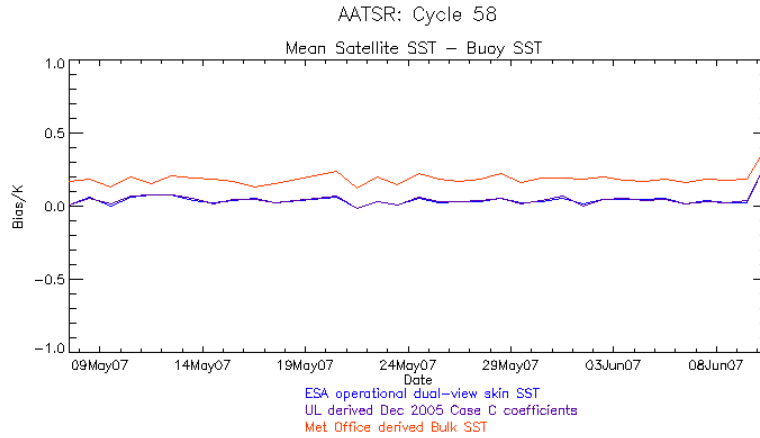


Figure 6-2 Comparison of daily mean difference between 10' AATSR SST values and in situ buoy SST for Cycle 58. Data provided by the Met Office.

During cycle 58, there were 1410 night time match-ups, with a mean (UL derived dual-view skin SST minus buoy SST) of +0.002 K, standard deviation 0.25 K, and a mean (dual-view bulk SST minus buoy SST) of +0.140 K, standard deviation 0.24 K. A total of 1278 daytime match-ups were found, with a mean (UL derived dual-view skin SST minus buoy SST) of +0.076 K, standard deviation 0.35 K, and a mean (dual-view bulk SST minus buoy SST) of +0.225 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.

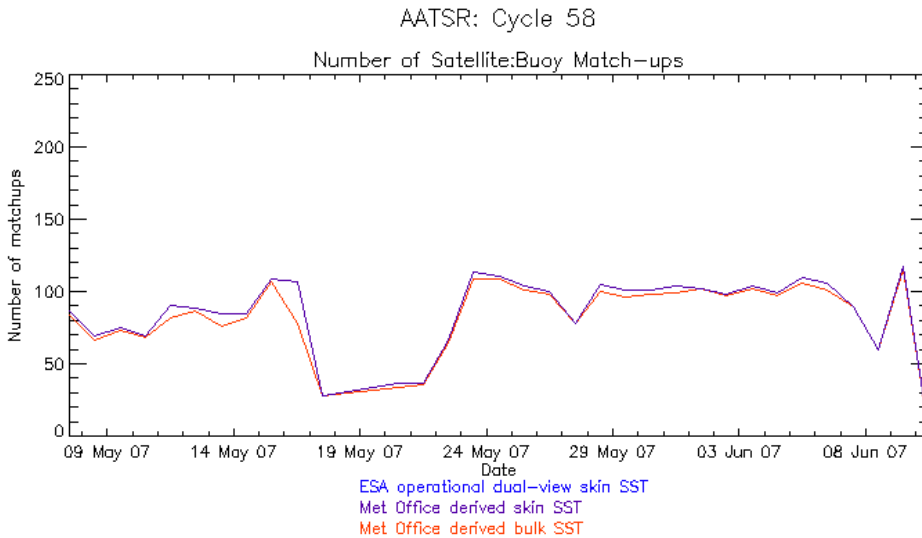


Figure 6-3 Plot of daily number of match-ups between 10' AATSR SST values and in situ buoy SST for Cycle 58. Data provided by the Met Office.

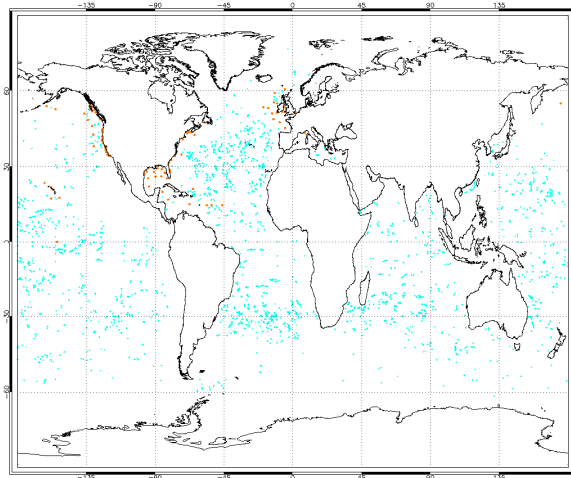


Figure 6-4: Map showing global distribution of match-ups between 10' AATSR SST values and in situ buoy SST for Cycle 58. The red dots indicate a match-ups to a moored buoy; the cyan dots indicate a match-up to a drifting buoy. Data provided by the Met Office.

6.2.1 VALIDATION DATA FROM CYCLE 57

A monthly mean global dual-view SST plot for Cycle 57 composed from ATS_AR_2P 10' data is shown below in Figure 6-5. The monthly mean contains day time and night time data.

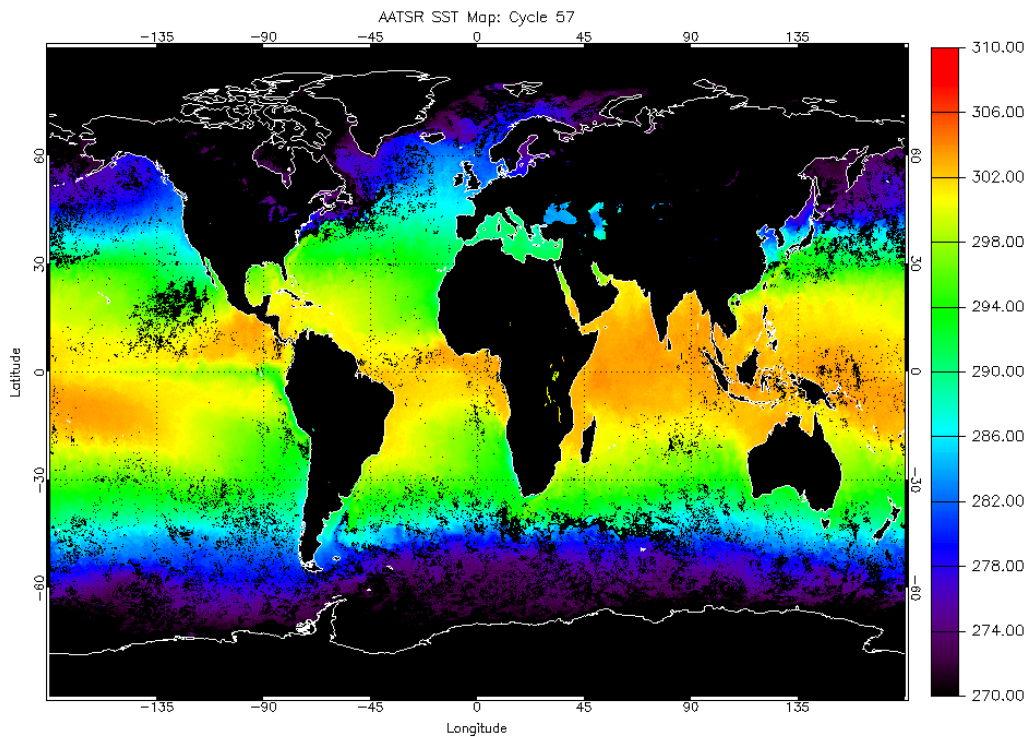


Figure 6-5 Monthly Global Average dual-view SST for Cycle 57.

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 57 being shown in Figure 6-6. The updated SST coefficients released in December 2005 were used in the AATSR SST retrievals.

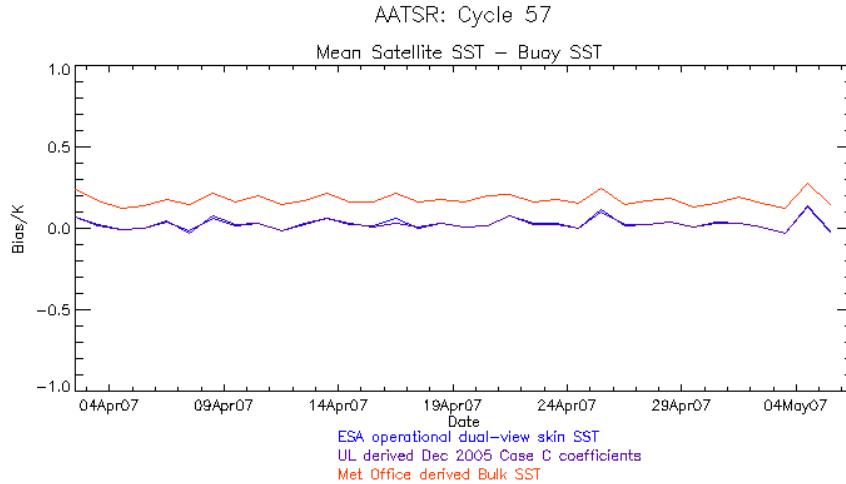


Figure 6-6 Comparison of daily mean difference between 10' AATSR SST values and in situ buoy SST for Cycle 57. Data provided by the Met Office.

During cycle 57, there were 1831 night time match-ups, with a mean (UL derived dual-view skin SST minus buoy SST) of -0.016 K, standard deviation 0.25 K, and a mean (dual-view bulk SST minus buoy SST) of +0.127 K, standard deviation 0.24 K. A total of 1560 daytime match-ups were found, with a mean (UL derived dual-view skin SST minus buoy SST) of +0.077 K, standard deviation 0.31 K, and a mean (dual-view bulk SST minus buoy SST) of +0.227 K, standard deviation 0.31 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.

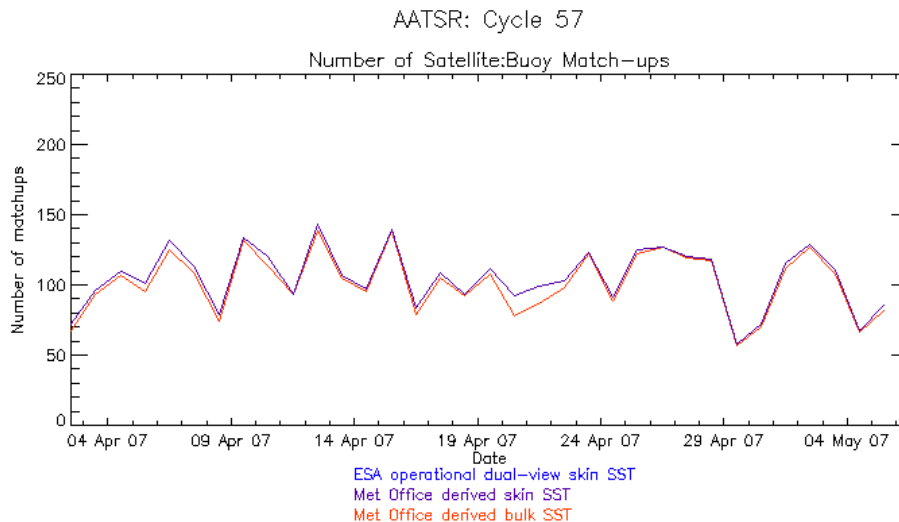


Figure 6-7 Plot of daily number of match-ups between 10' AATSR SST values and in situ buoy SST for Cycle 57. Data provided by the Met Office.

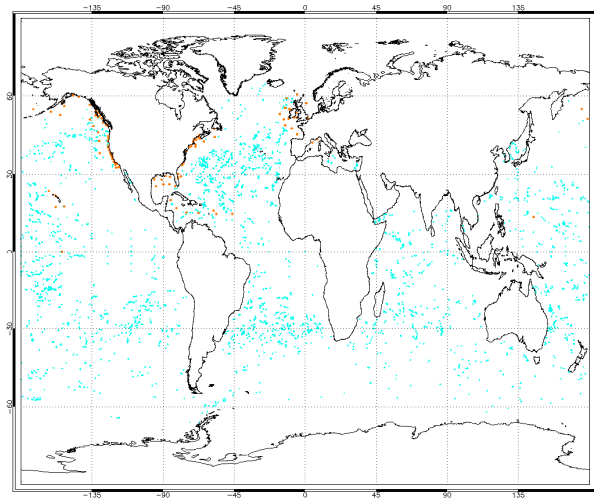


Figure 6-8 Map showing global distribution of match-ups between 10' AATSR SST values and in situ buoy SST for Cycle 57. The red dots indicate a match-ups to a moored buoy; the cyan dots indicate a match-up to a drifting buoy. Data provided by the Met Office.

7 **DISCLAIMERS**

No new disclaimers have been issued during this cycle.