

ANOMALIES (01.01.2003 - 31.12.2003)

On June 22 2003 the ERS-2 tape recorder became permanently unavailable due to a technical failure. The ERS-2 tape recorders were used to record the ERS-2 Low Rate mission globally. After eight continuous acquisition, this service is discontinued. The ERS-2 Low Rate mission is continued within the visibility of ESA ground stations over Europe, North Atlantic, the Arctic and western North America.

Additionally the DLR Antarctic Receiving Station at the O'Higgins base is providing GOME data in near-real time since 22 October 2003, allowing the monitoring of the ozone hole over the South Pole to resume.

Special GOME operations such as the operational switch off/switch on in time tag (on calendar days 04, 14, 24 each month) are continued also after the unavailability of the tape recorders. Nevertheless due to the non completeness of data, analysis on cooler switchings and instrument switch-offs cannot be performed and detailed information is missing in the tables below.

GOME solar measurements data are not available for certain periods (see table "Other Events" below), because they were scheduled during non-visibility periods of the groundstations after June 22 2003.

GOME Lamp Failures did not occur during 2003. The Lamp was used during the Monthly Calibration orbits on calendar day 28 each month. However the performance of the calibration lamp showed a high instability. A sudden decrease of the voltage from a value of ~198 to typically 180/185V, afterwards remaining on this low voltage value for several products then increase again to the nominal value was observed frequently.

listed are:

- 1. single event upsets**
- 2. patches of the on-board software**
- 3. cooler switchings**
- 4. list of datagaps due to anomalies or special GOME instrument operations**
- 5. timeline interruption (operation in static nadir view)**
- 6. narrow swath timeline GMNNOT41**
- 7. commanding problems - incorrect timelines executions**
- 8. moon measurements**
- 9. lamp failures**
- 10. other events**

single event upsets:

Date	reason
28/11/2003 - 01/12/2003	on-board software problem caused anomaly (orbits 44989 - 45039) Level 0: pixel readouts of channel 4 in saturation cured with switch-off/on in time-tag day 01/12

patches of the on-board software: none

cooler switchings:

Date	coolers off/on	maximum detector warm up temperature [Kelvin]
04/01/03	12:02:19 off 12:04:08 on	FPA 1: 245.0
		FPA 2: 245.5
		FPA 3: 245.2
		FPA 4: 245.4

		FPA 1: ~245 FPA 2: ~245
14/01/03	~10:06 off ~10:07 on	FPA 3: ~245 FPA 4: ~245
		exact warm up of detectors cannot be analysed due to data gap
24/01/03	11:32:36 off 11:34:26 on	FPA 1: 245.0 FPA 2: 245.5 FPA 3: 245.3 FPA 4: 245.2
04/02/03	12:26:21 off 12:28:10 on	FPA 1: 244.7 FPA 2: 245.2 FPA 3: 244.9 FPA 4: 245.1
14/02/03	10:30:21 off 10:32:11 on	FPA 1: 244.9 FPA 2: 245.2 FPA 3: 245.0 FPA 4: 245.0
21/02/03	01:54:09 off 10:49:07 on	FPA 1: 272.9 FPA 2: 273.9 FPA 3: 273.5 FPA 4: 273.9
24/02/03	11:55:25 off 11:57:14 on	FPA 1: 244.6 FPA 2: 245.0 FPA 3: 244.7 FPA 4: 244.9
04/03/03	11:02:42 off 11:04:32 on	FPA 1: 244.7 FPA 2: 245.3 FPA 3: 244.9 FPA 4: 244.9
14/03/03	12:27:35 off 12:29:25 on	FPA 1: 244.5 FPA 2: 245.1 FPA 3: 244.8 FPA 4: 244.9
24/03/03	10:31:21 off 10:33:10 on	FPA 1: 244.5 FPA 2: 245.0 FPA 3: 244.6 FPA 4: 244.9

04/04/03	11:24:32 off 11:26:22 on	FPA 1: 244.7 FPA 2: 245.1 FPA 3: 244.8 FPA 4: 244.8
14/04/03	19:32:07 off 19:33:56 on	FPA 1: 244.5 FPA 2: 244.9 FPA 3: 244.5 FPA 4: 244.8
24/04/03	10:53:47 off 10:55:37 on	FPA 1: 244.9 FPA 2: 245.1 FPA 3: 244.9 FPA 4: 244.9
04/05/03	12:19:03 off 12:20:54 on	FPA 1: 244.4 FPA 2: 245.0 FPA 3: 244.8 FPA 4: 244.9
06/05/03	07:54:29 off 07:56:19 on	FPA 1: 244.6 FPA 2: 245.1 FPA 3: 245.0 FPA 4: 244.9
14/05/03	10:23:20 off 10:25:10 on	FPA 1: 244.8 FPA 2: 245.0 FPA 3: 245.0 FPA 4: 244.9
16-20/05/03	10:15:43 (16/05/2003) off 09:40:24 (20/05/2003) on	FPA 1: 263.4 FPA 2: 264.5 FPA 3: 264.2 FPA 4: 264.6
22/05/03	08:41:46 off 13:32:41 on	FPA 1: 265.1 FPA 2: 265.5 FPA 3: 265.3 FPA 4: 265.8
24/05/03	11:49:00 off 11:50:49 on	FPA 1: 244.5 FPA 2: 245.0 FPA 3: 244.8 FPA 4: 244.8

31/05/03	11:49:00 off 11:50:49 on	FPA 1: 244.8 FPA 2: 245.1 FPA 3: 244.8 FPA 4: 244.9
04/06/03	12:43:04 off 12:44:54 on	FPA 1: 244.6 FPA 2: 244.9 FPA 3: 244.7 FPA 4: 244.9
05/06/03	02:07:52 off 02:09:41 on	FPA 1: 244.6 FPA 2: 244.9 FPA 3: 244.6 FPA 4: 244.7
14/06/03	14:09:06 off 14:10:55 on	FPA 1: 244.4 FPA 2: 244.9 FPA 3: 244.5 FPA 4: 244.9
21/06/03	14:39:49 off 19:31:03 on	FPA 1: 278.9 FPA 2: 278.7 FPA 3: 278.7 FPA 4: 278.6
01/07/03	15:53:00 off 15:55:32 on note, exact start time cannot be given due to data unavailability	FPA 1: 247.9 FPA 2: 247.7 FPA 3: 247.7 FPA 4: 247.6
14/09/03	13:51:17 off 18:25:11 on	FPA 1: ~268 FPA 2: ~268 FPA 3: ~268 FPA 4: ~268

list of datagaps due to anomalies or special GOME instrument operations: (For detailed information see monthly/weekly performance)

Date	Orbit	duration (GOME off/start of nominal operations)	reason
01/01/03	40255	07:36:11 - 09:18:20	gap at KS (whole orbit)
04/01/03	40300	12:02:19 - 12:03:54	gap at KS due to the execution of timeline GMN11 (switch-off/switch-on in time-tag)
14/01/03	40441-2	09:06:44 - 10:36:49 10:46:34 - 10:52:41	gaps due to IDHT unavailability (see ER2-UNA 2003/001)
22/01/03	40553	02:58:00 - 04:13:51	gap at GS
24/01/03	40586	11:32:36 - 11:34:13	gap at KS due to the execution of timeline GMN11 (switch-off/switch-on in time-tag)
04/02/03	40744	12:26:21 - 12:27:57	gap at KS due to the execution of timeline GMN11 (switch-off/switch-on in time-tag)
07/02/03	40785	08:14:29 - 09:55:46	gap at KS

12/02/03	40855	05:20:35 - 07:15:54	gap at KS
14/02/03	40886	10:30:21 - 10:31:57	gap at KS due to the execution of timeline GMN11 (switch-off/switch-on in time-tag)
21/02/03	40981-985	01:54:09 - 09:08:06	data gap due to GOME switch-off (see ER2-UNA- 2003/003-004)
24/02/03	41026	04:00:13 - 05:30:10	PS orbit missing
24/02/03	41030	11:55:25 - 11:57:02	gap at KS due to the execution of timeline GMN11 (switch-off/switch-on in time-tag)
25/02/03	41040	03:29:12 - 05:11:57	PS orbit missing
04/03/03	41144	11:02:42 - 11:04:19	gap at KS due to the execution of timeline GMN11 (switch-off/switch-on in time-tag)
12/03/03	41253	02:05:54 - 02:17:51	gap at GS
14/03/03	41288	12:27:35 - 12:29:12	gap at KS due to the execution of timeline GMN11 (switch-off/switch-on in time-tag)
15/03/03	41296-297	02:23:42 - 03:03:59	gap at GS
18/03/03	41433	05:51:36 - 07:47:55	gap at KS
24/03/03	41430	10:31:21 - 10:32:57	gap at KS due to the execution of timeline GMN11 (switch-off/switch-on in time-tag)
27/03/03	41469	02:46:30 - 03:35:13	gap at GS
04/04/03	41593	18:47:37 - 20:27:11	KS orbit missing
04/04/03	41588	11:24:32 - 11:26:09	gap at KS due to the execution of timeline GMN11 (switch-off/switch-on in time-tag)
14/04/03	41730	08:40:39 - 10:21:21	KS orbit missing
14/04/03	41736	19:32:07 - 19:33:43	gap at KS due to the execution of timeline GMN11 (switch-off/switch-on in time-tag)
24/04/03	41874	10:53:47 - 10:55:23	gap at KS due to the execution of timeline GMN11 (switch-off/switch-on in time-tag)
30/04/03	41959-60	08:37:47 - 11:45:00	data gap at KS due to IDHT tape recorder maintenance (see unavailability fax ERS2-2003/12)
30/04/03	41961	11:57:35 - 13:41:01	data gap at KS due to IDHT tape recorder maintenance (see unavailability fax ERS2-2003/12)
03/05/03	42001	07:00:12 - 08:31:38	gap at KS
04/05/03	42018	12:19:03 - 12:20:40	gap at KS due to the execution of timeline GMN11 (switch-off/switch-on in time-tag)
06/05/03	42044	07:54:29 - 07:56:05	gap at KS due to the execution of timeline GMN11 (switch-off/switch-on in time-tag) usually planned only on days 04, 14, 24 each month
06-07/05 /03	42054	23:30:57(06/05/03) - 00:51:08(07/05/03)	data gap at GS
14/05/03	42160	10:23:20 - 10:24:56	gap at KS due to the execution of timeline GMN11 (switch-off/switch-on in time-tag)
16/05/03	42189	10:15:43	Payload unavailability due to data bus reconfiguration (see unavailability fax ER2-UNA-2003/013)
16-20/05 /03	42189 - 42246	10:15:43 (16/05/2003) - 09:40:24 (20/05/2003)	Payload unavailability due to data bus reconfiguration (see unavailability fax ER2-UNA-2003/013-015)
22/05/03	42273-42275	08:41:46 - 10:32:31	data gap due to GOME/ATSR was inhibited due to ATSR restart (see unav. fax, ESOC, ER-UNA-2003/016-17)
24/05/03	42304	11:49:00 - 11:50:36	note from 10:32:31 to 13:20 GOME was in idle mode gap at KS due to the execution of timeline GMN11 (switch-off/switch-on in time-tag)
25/05/03	42320	13:49:30 - 15:27:19	KS orbit missing
25/05/03	42322	17:05:51 - 18:45:00	due to a RA recovery GOME was unavailable due to PL synchronise. unavailability fax ER2-UNA 2003/018
29/05/03	42372	06:17:12 - 06:28:17	gap at PS
31/05/03	42399	03:05:33 - 03:07:10	gap at KS due to the execution of timeline GMN11 (switch-off/switch-on in time-tag) usually planned only on days 04, 14. 24 each month
02/06/03	42436	16:15:05 - 17:41:46	gap at KS
03/06/03	42450	15:44:09 - 17:22:47	gap at KS
04/06/03	42462	12:43:04 - 12:44:41	gap at KS due to the execution of timeline GMN11 (switch-off/switch-on in time-tag)
05/06/03	42470	02:07:52 - 02:09:28	gap at KS due to the execution of timeline GMN11 (switch-off/switch-on in time-tag) usually planned only on days 04, 14. 24 each month

14/06/03	42604	10:04:23 - 11:43:35	due to an Emergency switch down due to Format Acquisition Error, GOME was unavailable (Payload synchronisation) see, ER-UNA-2003-022
14/06/03	42606	14:09:06 - 14:10:42	gap at KS due to the execution of timeline GMN11 (switch-off/switch-on in time-tag)
15/06/03	42617	07:51:02 - 09:32:50	KS orbit missing
21/06/03	42707-708	14:39:49 - 17:50:26	due to a GOME RTM counter anomaly the instrument was unavailable (Payload synchronisation) see, ER-UNA-2003-023-024
22/06/03	42719	10:52:47 - 11:56:15	gap at KS
22/06/03	42720	12:31:21 - 13:58:08	gap at KS
			IDHT Tape recorder A switched off due to motor overcurrent, (see ER-UNA-2003/025)
22/06/03		13:59:44 (22/06/03) - 12:56:01 (24/06/03) &	(no data except small data set dump orbit 42749, KS, 12:56:01 - 13:06:33(24/06/03))
-	42720 - 42849		
01/07/03		13:06:33 (24/06/03) - &	
		14:14:59 (01/07/03)	Payload switched off due to MCMD incorrect TimeTag
			24/06/2003 16:20, (see ER2-UNA 2003-26)
22/06/03			IDHT Tape recorder A switched off due to motor overcurrent, (see ER-UNA-2003/025)
-	42748 - 42849	13:59:44 (22/06/03) - 14:14:59 (01/07/03)	
01/07/03			
02/07/03			
-	42860 and following	07:15:15 (02/07/03) and following	recording capabilities permanently unavailable
15/07/03			
19/07/03	43102		no data received for PS
20/07/03	43117		no data received for PS
14/09/03	43923 - 925	13:51:17 - 16:40:50	data gap due to GOME switch-off (see ER2-UNA- 2003/003-041)
08-16/12		00:01:10 (08/12/03) -	
/03	45132 - 45260	22:51:10 (16/12/03)	no data from MS due to an anomaly at Maspalomas station

Timeline Interruption (operations in static nadir view):

Date	Orbit No.	duration	reason
01/03/03	41105	16:29:52 - 18:05:47	ESOC unavailability fax ER2-UNA-2003/005; due to an AMI emergency switch down the GOME timeline was interrupted
20/10/03	44441	17:45:50 - 17:54:03 17:56:30 - 18:06:04	due to an AMI anomaly GOME timeline was stopped
13/11/03	44781	11:53:35 - 12:18:40	due to an AMI anomaly GOME timeline was stopped
28/11/03	44993 - 44994	07:22:36 - 09:15:39	GOME in Nadir Static View
28/11/03	44996 - 45000	12:21:08 - 19:21:55	GOME in Nadir Static View
13/12/03	45211	12:53:00 - 13:13:29	due to an RA anomaly GOME timeline was interrupted, instrument in Nadir Static View
13/12/03	45212	14:30:21 - 14:50:53	due to an RA anomaly GOME timeline was interrupted, instrument in Nadir Static View

Narrow Swath Timeline GMNNOT41

Date	Orbit No.	Duration
04-05/01/03	40302 - 40315	~14:00 (04/01/03) - ~12:00 (05/01/03)
14-15/01/03	40444 - 40458	~12:00 (14/01/03) - ~13:00 (15/01/03)
24-25/01/03	40588 - 40601	~14:00 (24/01/03) - ~11:00 (25/01/03)
04-05/02/03	40746 - 40759	~14:00 (04/02/03) - ~12:00 (05/02/03)

14-15/02/03 40888 - 40901 ~12:30 (14/02/03) - ~10:00 (15/02/03)
 24-25/02/03 41032 - 41044 ~14:00 (24/02/03) - ~12:00 (25/02/03)
 04-05/03/03 41145 - 159 ~13:30 (04/03/03) - ~11:00 (05/03/03)
 14-15/03/03 41290 - 304 ~14:30 (14/03/03) - ~14:00 (15/03/03)
 24/03/03 41432 - 438 ~12:30 (24/03/03) - ~22:50 (24/03/03)
 24-25/03/03 41439 - 445 22:50 (24/03/03) - 10:00 (25/03/03)
 04-05/04/03 41590 - 603 ~13:30 (04/04/03) - ~12:30 (05/04/03)
 14-15/04/03 41732 - 747 ~11:30 (14/04/03) - ~13:00 (15/04/03)
 24-25/04/03 41876 - 889 ~13:00 (24/04/03) - ~11:00 (25/04/03)
 04-05/04/03 42020 - 032 ~14:00 (04/05/03) - ~12:00 (05/05/03)
 14-15/05/03 42161 - 175 ~12:30 (14/05/03) - ~10:00 (15/05/03)
 24-25/05/03 42306 - 319 ~14:00 (24/05/03) - ~11:30 (25/05/03)
 04-05/06/03 42463 - 476 ~15:00 (04/06/03) - ~12:00 (05/06/03)
 14-15/06/03 42605 - 619 ~13:00 (14/06/03) - ~10:30 (15/06/03)
 04-05/08/03 43336 - 349 ~13:00 (04/08/03) - ~10:30 (05/08/03)
 14-15/08/03 43479 - 43492 ~14:00 (14/08/03) - ~11:00 (15/08/03)
 24-25/08/03 43622 - 43635 ~12:00 (24/08/03) - ~10:00 (25/08/03)
 04-05/09/03 43780 - 43793 ~13:30 (04/09/03) - ~11:00 (05/09/03)
 14-15/09/03 43927 - 43937 ~20:00 (14/09/03) - ~12:30 (15/09/03)
 04-05/10/03 44212 - 44225 ~18:00 (04/10/03) - ~15:00 (05/10/03)
 14-15/10/03 44354 - 44368 ~16:00 (14/10/03) - ~15:00 (15/10/03)
 24-25/10/03 44498 - 44510 ~17:00 (24/10/03) - ~14:00 (25/10/03)
 04-05/11/03 44654 - 44667 ~15:00 (04/11/03) - ~12:00 (05/11/03)
 14-15/11/03 44796 - 44809 ~13:00 (14/11/03) - ~11:00 (15/11/03)
 24-25/11/03 44940 - 44953 ~14:00 (24/11/03) - ~12:00 (25/11/03)
 04-05/12/03 45082 - 45099 ~12:30 (04/12/03) - ~16:30 (05/12/03)
 14-15/12/03 45226 - 45239 ~14:00 (14/12/03) - ~11:00 (15/12/03)
 24-25/12/03 45368 - 45383 ~12:00 (24/12/03) - ~13:00 (25/12/03)

Commanding Problems - Incorrect Timelines Executions: none

Moon Measurements: none

Lamp Failures: none

Other Events

Date	Orbit	remark
04/02/03	40741	NEW software version number LRDPF 9100
14/03/03 - 06/05/03	41284 - 42041	GOME North Polar View operations
23/06/03 - 12/08/03; 14/08/03 - 07/09/03;		no solar calibration measurements available
09/09/03 - 13/09/03		