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MINUTES of
MEETING

date de la réunion	25/26 January 2007	ref./*réf.*	SE-R&D-min-25-01-07\CZ	page/*page*	1 / 8

Meeting place *lieu de la réunion*	IAA - Granada	Chairman Secretary	C. Zehner C. Zehner
minute's date *dates de minute*	02 February 2007	participants *participants*	Enclosed Listing
subject/objet	**5th MIPAS Science Team Meeting**	copy/*copie*	G. Kohlhammer, S. Briggs, H. Laur, M. Doherty, E. Herland, YL. Desnos

description/description	action/action	due date/date limite
ACTIONS (this meeting)		
AI1 on T. Fehr to provide to C. Zehner the new MIPAS IODD in order to upgrade the BEAT software tool for MIPAS data handling.	ESA	closed
AI2 on M. D'Laurentis to plan during the first weekend in March 2007 sideward LOS calibration measurements.	ESA	asap
AI3 on the MIPAS Science Team to define 8 days during 2007 (equinox as starting point) of orbits sideward viewing over the full orbit by providing following input to M. D'Laurentis: • 20 Azimuth Angles (e.g. twice the same 10) • Tangent Point Altitudes (e.g. altitude profile) • Altitude to be optimized (e.g. one single value)	MST	asap
AI4 on T. Fehr to check with Bomen if a schedule with either a 5 day or a 10 day period for the calibration measurements could be adopted instead of the present schedule with one week period.	ESA	asap
AI5 on H. Oelhaf to update the current MIPAS mission planning document based on the outcome of this meeting.	MST	asap
AI6 on M. D'Laurentis to check the feasibility to calculate MIPAS LOS in respect to the terminator as a function of time (for 4 orbits for the 4 seasons) and to provide this input to the MIPAS Science Team.	ESA	asap
AI7 on M. D'Laurentis to plan just after the ECOWAR campaign 1 day of MIPAS rearward operations with fixed azimuth (exact in the orbital plane) in order to characterise a possible roll offset between the MIPAS instrument and the Envisat platform.	ESA	asap
AI8 on C. Zehner to provide the coordinates of an active volcano in Africa to M. D'Laurentis.	ESA	asap

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description/description	action/action	due date/date limite
AI9 to M. D'Laurentis to plan a volcanic measurement scenario over 8 days for this case (in interaction with the Science Team).	ESA	asap

1. Welcome

M. López-Puertas welcomes all participants at IAA, where the 5th MIPAS Science Team Meeting is taking place.

2. Action Items Status of last Meetings

Zehner (ESA)

All open Action Items (AIs) of previous MIPAS Science Team Meetings have been reviewed and open AIs are enclosed below.

3. MIPAS Instrument Status

Fehr (ESA)

The expected lifetime of the Envisat platform is now by the end of 2010. Since spring 2006 the MIPAS instrument performance has been good and it might be feasible to gradually increase the MIPAS duty cycle during the year 2007.

4. MIPAS Data Processing Status

Fehr (ESA)

The implementation of the new Level 1 processor (Version 4.67) has been finalised at DLR (DPAC) and all level 1 B products are available to users via ftp server.

On Level 2 products we will have in future 2 different product formats (one for low spectral resolution and one for high spectral resolution measurements) and ESA data handling tools will have to be upgraded.

AI1 on T. Fehr to provide to C. Zehner the new MIPAS IODD in order to upgrade the BEAT software tool for MIPAS data handling.

The new MIPAS Level 2 validation data set (about 300 orbits) is being processed with the prototype software. The operational implementation of the new MIPAS Level 2 processor into DPAC will be performed during 2007 (including the reprocessing of all MIPAS Level 2 data).

No NRT MIPAS data processing is foreseen in the near future.

Based on user feedback (unflagged unrealistic MIPAS temperature values) the MIPAS Science Team recommends to ESA to include better QA flagging into the MIPAS L2 data.

5. Overview on executed MIPAS Instrument Operations during the last half year

M. De'Laurentis (ESA)

Since the last MIPAS Science Team Meeting a series of campaigns (e.g. AMMA, ECOWAR, CIRRUS III, and ECMWF) have been supported by dedicated MIPAS operations. During 27-29 Dec. 2006 AE Mode has been executed. Re-initialisation is now performed every 3rd orbit except during campaigns, when re-initialisation is performed during every orbit.

Detailed MIPAS mission planning has been performed by March 02 2007. Based on the good MIPAS instrument performance the current instrument duty cycle is about 50% (since Dec. 10 2006).

On the MIPAS pointing there is some evidence that there is a bias between the MIPAS instrument and the platform during roll and therefore specific MIPAS measurements shall be performed in order to characterise this.

6. Review of new MIPAS Modes/Measurements/ Future Operations

The settings of all new MIPAS operational modes seem to be fine now (beside some AE measurements starting at about 10 km instead at 5 km height).

The feasibility to measure the same airmass with MIPAS was discussed by using sideward operations alternating with rearward instrument operations. This is in practical terms unrealistic due to the high amount of macrocommands, which will have to be uploaded onto the instrument.

Instrument operations with orbits looking sideward during the full orbit would be ok in order to study diurnal changes, but sideward LOS calibration measurements and input from the Science Team for the planning will be necessary.

AI2 on M. D'Laurentis to plan during the first weekend in March 2007 sideward LOS calibration measurements.

AI3 on the MIPAS Science Team to define 8 days during 2007 (equinox as starting point) of orbits sideward viewing over the full orbit by providing following input to M. D'Laurentis:

- 20 Azimuth Angles (e.g. twice the same 10)
- Tangent Point Altitudes (e.g. altitude profile)
- Altitude to be optimized (e.g. one single value)

Campaigns to be supported during the first half of 2007: SAUNA-2, ECOWAR and a Kiruna balloon campaign – ECOWAR being the only one with the need for specific measurements which are: 3

orbits per day passing over/close by the Plateau de Rosa in Italy over a period of 5 days followed by 2 days global measurements followed again by 5 days with 3 orbits per day – all in NOM Mode.

In order to measure NOx transport from the Mesosphere down into the Stratosphere over polar regions the baseline operations planning for 2007 gives more weight to NOM and MA mode measurements, which leads to following basic mission scenario: 1 day in MA mode, 3 days in NOM mode, 3 days off, 1 day in NOM mode, 2 days off.

Following this sequence during summer time (1 July - 20 July) NLC mode shall be executed replacing the planned MA measurements.

Four times a year UA Mode shall be executed (during Equinox and Solstice) in following sequence: 1 day UA and MA mode, 3 days NOM, 2 days off, 1 day NOM, 2 days off.

AE Mode shall be executed at least once per year during winter time: the next one shall be performed during August 2007 replacing in a baseline sequence the 3 days NOM measurements.

Beside these scientific measurements every week at the same time calibration measurements have to be performed.

AI4. on T. Fehr to check with Bomen if a schedule with either a 5 day or a 10 day period for the calibration measurements could be adopted instead of the present schedule with one week period.

AI5 on H. Oelhaf to update the current MIPAS mission planning document based on the outcome of this meeting.

AI6 on M. D'Laurentis to check the feasibility to calculate MIPAS LOS in respect to the terminator as a function of time (for 4 orbits for the 4 seasons) and to provide this input to the MIPAS Science Team.

AI7 on M. D'Laurentis to plan just after the ECOWAR campaign 1 day of MIPAS rearward operations with fixed azimuth (exact in the orbital plane) in order to characterise a possible roll offset between the MIPAS instrument and the Envisat platform.

Furthermore a real volcanic monitoring should be tried to be executed during 2007.

AI8 on C. Zehner to provide the coordinates of an active volcano in Africa to M. D'Laurentis.

AI9 to M. D'Laurentis to plan a volcanic measurement scenario over 8 days for this case (in interaction with the Science Team).

In case the MIPAS instrument performance will continue as it is right now an increase of the MIPAS duty cycle to 60% might be feasible leading to following baseline scenario: 1 day MA mode, 3 days NOM mode, 2 days off, 2 days NOM mode, 2 days off. After the next MIPAS QWG meeting it might be decided (based on the actual MIPAS instrument performance) to increase the MIPAS duty cycle.

7. Future Mission Planning

MIPAS Short-Term Operational Scenario:

Time 2007	**Mode**	**Operational Scenario**	**Objective**
March 3-4	Sideward LOS calibration		Calibration
March 5-10	NOM	3 orbits/day	ECOWAR Campaign support
March 11-12	NOM	Global measurements	ECOWAR Campaign support
March 13-18	NOM	3 orbits/day	ECOWAR Campaign support
March 19	NOM	Fixed azimuth in orbital plane	Calibrations

ECOWAR Campaign: The three orbits will change form day to day as they will be the orbits that, among both day and night overpasses, provide the closest coincidence with the longitude of Plateau de Rosa.

Baseline Scenario for 2007:

- New baseline scenario as described above (MA and NOM mode)
- Yearly execution of AE mode
- 4 times UA mode
- NLC mode during summer time

8. MIPAS Data Exploitation

This item has been postponed to the next MIPAS Science Team Meeting.

9. Any Other Business

The publication of all MIPAS Validation Papers (under the lead of H. Fischer) is close to its finalisation

Next MIPAS Science Team Meeting: is planned at Karlsruhe/Baden – Sep. 18/19

Agenda:

	Jan 25
14.00-14.10	Welcome/Logistics (M. Lopez-Puertas)
14.10-14.30	Agenda/AIs from last Meetings (C. Zehner)
14.30-14.50	MIPAS Instrument Status (T. Fehr)
14.50-15.10	Status on ESA MIPAS Processors (including reprocessing and data delivery to users so far) (T. Fehr)
15.10-15.30	Overview on executed MIPAS Instrument Operations during the last half year (M. De'Laurentis)
15.30-16.00	Coffee Break
16.00-17.30	Review of MIPAS (as performed so far) Operations and Definition of future Operations Scenario (including campaigns by mid 2007) - Future planning (H. Oelhaf) - Scientific campaigns (All)
	Jan 26
09.00-09.30	Any recent campaign intercomparison results available? (All)
09.30-10.30	Any Scientific results or problems found using the new MIPAS Level 1 data sets (low spectral resolution – all modes)? (All)
10.30-11.00	Coffee Break
11.00-11.30	Ongoing/Planned Activities within ESA on MIPAS Data Exploitation (C. Zehner)
11.30-12.00	Ongoing/Planned Activities within EC and National projects on MIPAS Data Exploitation (All) AOB

List of Participants:

Carli, Bruno	IFAC
Carlotti, Massimo	Universita Degli Studi di Bologna, Dip. di Chimica Fisica ed Inorganica
Dudhia, Anu	Oxford University, Atmospheric Oceanic & Planetary Physics Clarendon Laboratory
Fischer Herbert; Oelhaf Herman	Institut für Meteorologie und Klimaforschung, Forschungzentrum Karlsruhe
Flaud, Jean-Marie	LISA CNRS/Univ Paris
López-Puertas, Manuel	Instituto de Astrofisica de Andalucia
Fehr Thorsten; Marta de Laurentis;	ESA

Annex A:

Open ACTIONS from previous Meeting		status
AI3ST4 M. de Laurentis to check the feasibility to operate MIPAS planning under an emergency call (as fast as possible) in case there is a big volcanic eruption.	ESA	ongoing
AI11ST4 C. Zehner to collect MIPAS peer-reviewed scientific publications and make them available at the ESA Principal Investigator Webpage - eopi.esa.int.	ESA	ongoing
AI3ST3 to T. Fehr to check the available quality flags in the MIPAS L1 and L2 and report this back to IMK **changed to:** T. Fehr to make sure that key MIPAS Quality Flags are described in the MIPAS handbook.	ESA	open
AI4ST3 to T. Fehr to check the feasibility to perform AE measurements over 1 full orbit.	ESA	open (investigations on technical feasibility still ongoing)
AI9ST2 ESA to include a listing onto the Uranus ftp server providing an overview of re/processed MIPAS Level 1 and Level 2 data including the version number of the processing software being used.	ESA	for measurements with high spectral resolution closed/ongoing for measurements in low spectral resolution
AI12ST2 MIPAS Science Team to provide MIPAS PR images to C. Zehner (onto ftp server - to be used for the ESA Envisat Webpage-Gallery on MIPAS promotion).	MST	ongoing