

## Phobos Workshop

### Monday March 29 - April 1, 2010

### Workshop Attendees

| Name                     | Role            | National | Attendance  |
|--------------------------|-----------------|----------|-------------|
| Prof. Jürgen Oberst      | Coordinator     | D        | MoTuWeTh    |
| Dr. Robert A. Jacobson   | Team Member     | USA      | MoTuWeTh    |
| Dr. Martin Pätzold       | Team Member     | D        | MoTuWeTh    |
| Prof. Carle M. Pieters   | Team Member     | USA      | MoTuWeTh    |
| Prof. Kira B. Shingareva | Team Member     | RU       | MoTuWeTh    |
| Prof. Alexander Zakharov | Team Member     | RU       | MoTuWeTh    |
| Dr. William Thuillot     | Team Member     | F        | MoTuWeTh    |
| Dr. Valery Lainey        | TM Replacem.    | F        | MoTuWeTh    |
| Dr. John Murray          | TM Replacem     | GB       | MoTuWeTh    |
| Marita Wählisch          | TM Replacem.    | D        | MoTuWeTh    |
| Dr. Pascal Rosenblatt    | Expert          | B        | MoTuWeTh    |
| Dr. Andrew Ball          | Expert          | NL       | MoTuWeTh    |
| Prof. Nicolas Thomas     | Expert          | CH       | via telecon |
| Dr. Tom Andert           | Young Scientist | D        | MoTuWe      |
| Dr. Konrad Willner       | Young Scientist | D        | MoTuWeTh    |
| Shi Xian                 | Young Scientist | China    | MoTuWeTh    |
| Alexander Lobanov        | Young Scientist | RU       | MoTuWeTh    |
| Dr. Michael West         | Young Scientist | AUS      | via telecon |

# Agenda

## Monday, March 29

*Session 1: 11:00 – 12:30 Introduction*

Welcome

[Introduction to the Workshop](#)

Context: Summary of previous Phobos workshops at Ames

ISSI Representative (10)

J. Oberst (10)

A. Ball (20)

[History of Phobos Observations – From Discovery to the Beginning of the Space Age](#)

W. Thuillot (30)

*Session 2: 14:00 - 17:00 Phobos Surface Photometry and Geology*

*Chairpersons: A. Zakharov*

[Phobos surface colors and implications](#)

[Surface regolith, grooves, and ages](#)

[Phobos and Deimos colors from MPF and MRO](#)

C. Pieters (45)

J. Murray (30)

N. Thomas  
(30, via telecon)

Phobos geochemistry: Meteoritical and sample analysis perspective

A. Ball (30)

Discussion: Phobos origin

## Tuesday, March 30

*Session 3: 9:30 – 12:00 Astrometric data and orbit models*

*Chairperson: W. Thuillot*

Tutorial:

[The JPL Solar System ephemerides development project](#)

R. Jacobson (30 Min)

[Historic astrometric observations and secular modelling](#)

[Summary of MEX astrometric observations](#)

[MRO astrometric observations of Phobos and Deimos](#)

[Martian Satellite Ephemeris](#)

V. Lainey (30)

K. Willner (15)

R. Jacobson (15)

R. Jacobson (15)

*Session 4: 13:30 – 15:00 Spacecraft Tracking and Mass Determinations*

*Chairperson: L. Zelenyi*

[Tutorial: Instrumentation and radio science techniques](#)

T. Andert (20)

[Tutorial: Precise orbit determination of MEX and applications](#)

P. Rosenblatt (20)

The gravity signature of Phobos from the March 3 flyby

M. Pätzold / T. Andert (20)

*Session 5: 15:30 – 17:30 Phobos Geodesy and Cartography*

*Chairperson: K. Shingareva*

[Tutorial: What is a control point network?](#)

J. Oberst (15)

[The Mars Express Mission and the Phobos Flybys](#)

J. Oberst (10)

[Summary of Mars Express control network and shape models](#)

K. Willner (15)

[Phobos maps and coordinates / History and today](#)

M. Wählisch (15)

Team Dinner

## **Wednesday, March 31**

*Session 6: 9:30 – 12:00 Phobos Interior*

*Chairperson: R. Jacobson*

[Tutorial: How to predict gravity fields from a shape model](#)

S. Xian (15)

[Tutorial: Relationships between shape models and librations](#)

K. Willner (15)

Phobos interior and origin from geodetic observations

P. Rosenblatt (20)

Modeling of the Interior Structure of Phobos

P. Rosenblatt (20)

*Session 7: 13:30 – 17:00 The Phobos Grunt Mission*

*Chairperson: C. Pieters*

[The Phobos Grunt Mission](#)

A. Zakharov (30)

[Plans for Phobos Grunt mapping](#)

K. Shingareva (15)

[Some aspects concerning the geodesy support](#)

A. Lobanov (15)

[Discussion: Science Requirements and Required Actions for the Phobos Grunt mission](#)

## Thursday, April 1

*Session 8: 9:30 – 12:00 Previous Phobos Missions and Lessons Learned*

*Chairperson: J. Oberst*

Phobos 1 / 2 missions

[Aladdin – Proposed Phobos Sample Return](#)

A. Ball (20)

C. Pieters (20)

Workshop Summary

[Plans for Phobos Grunt workshop at IKI](#)

J. Oberst (20)

A. Zakharov (10)

[Discussion: Publication plans / future meetings](#)

*Afternoon*

Optional sightseeing and visit to the  
Einstein Museum

