



The Agenzia Spaziale Italiana, the U.S. Geological Survey, and the International Research School of Planetary Sciences invite you to the

**GEOLOGICAL MAPPING OF MARS:
A WORKSHOP ON NEW CONCEPTS AND TOOLS**

**IL CIOCCO, TUSCANY, ITALY
12 – 14 OCTOBER 2009**

AND

FIELD TRIP ON THE GEOLOGY OF TUSCANY

15 – 16 OCTOBER 2009

The Agenzia Spaziale Italiana ([ASI](#)) has started through the International Research School of Planetary Sciences ([IRSPS](#)) a project to map the surface of Mars using Geographical Information Systems and applying advanced stratigraphic and sedimentological concepts. The U.S. Geological Survey [Astrogeology Science Center](#) in Flagstaff, (Arizona, USA) is internationally recognized for its development and publication of planetary geologic maps. ASI, USGS and IRSPS are inviting planetary geologists and mapping specialists to attend this workshop to learn of, discuss, and improve on the concepts and tools that are being developed for the future mapping of planet Mars. The workshop venue is the Il Ciocco Resort in Tuscany, Italy.

Workshop Rationale

The large amount of new data from Mars coming from several current missions is amply supplying the international planetary research community with detailed data, including high resolution images topographic data, spectral mapping, and subsurface radar sounding. This community now has the opportunity to produce major updates to the characterization and interpretation of the geology of the planet. The most fundamental and comprehensive approach to do this is geological mapping. These maps address existing scientific issues and assist exploration programmes in formulating and meeting their objectives. The efficient production of geological maps requires sound technical approaches supported by focused scientific analysis. Fundamentally, a geological map should be focused, relevant, timely, objective, and broadly useable as a context for scientific research.

The workshop will focus on three currently evolving aspects to planetary geological mapping: (1) the identification and mapping of geological units and features, (2) the digital tools that provide an efficient way to assemble data and map the surface, and (3) the extension of surface contact mapping into the subsurface and in a 3D environment. Specific questions to be addressed include: How can and should we distinguish stratigraphic formations and their members? Can we map sedimentary facies? When and where is it appropriate to account for secondary geologic processes

and landforms in the delineation and description of geological units? How can computer tools be used for mapping geological units and features? How can we integrate subsurface data, like the data provided by SHARAD and MARSIS subsurface radars, into surface data sets? Using topographic and subsurface data sets, how can we trace unit contacts defined at the surface in orbital images into the subsurface? Which computer tools can we use for the integration of orbital and lander data? How can we get reliable information for and then map such features as paleocurrents, grain size, matrix content, etc.? How can we use geological mapping for future mission planning to advance the exploration of Mars?

Format of the Workshop

The Workshop will consist of three days of sessions and two days of field trip to visit the large variety of geological setting of Tuscany. It will be possible to participate only the first day of the excursion.

Workshop participants are encouraged to be interactively involved in both presentations and discussions. Four sessions will be organized, as follows: (1) new concepts and techniques used in detailed and state-of-the-art geological mapping, (2) GIS and imaging tools and techniques for efficient inclusion of multiple data sets in geological mapping, (3) topographic and subsurface data sets and how to map in 3D, and (4) other associated topics. Each session will include oral and poster presentations.

Venue and Dates

The workshop will be held at the [Il Ciocco Hotel and Resort](#), 12 – 14 October 2009, followed by the field trip. Il Ciocco is a convention centre with accommodations, restaurants and meeting facilities beautifully located in the Tuscany foothills north of the cities of Pisa and Florence, which are both served by airports. Shuttles will be available from both cities (downtown and airport).

Organisation

Conveners

Enrico Flamini, Agenzia Spaziale Italiana, Rome, Italy
Gian Gabriele Ori, IRSPS, Pescara, Italy
Ken Tanaka, U.S. Geological Survey, Flagstaff, Arizona, USA
Gerhard Neukum, Freie Universitet Berlin, Germany
Angelo Pio Rossi, ISSI, Bern, Switzerland

Coordinators

General	Angelo Pio Rossi, ISSI, Bern, Switzerland
GIS and imaging	Trent Hare and Jim Skinner, U.S. Geological Survey, Flagstaff, Arizona, USA, Stephan Van Gasselt, Freie Universitat Berlin, Germany
Geological Mapping	Monica Pondrelli, IRSPS, Pescara, Italy Ken Tanaka and Jim Skinner, U. S. Geological Survey, Flagstaff, Arizona, USA

Local organisation

Marinella Ercoli, ASI, Italy
Stefania Celenza, IRSPS, Italy
Adele Graziani, ASI, Italy

Registration

Through 31 July 2009	€180 professionals; €80 students
1 st August – 30 September 2009	€230 professionals; €110 students
After 1 October 2009	Onsite registration only €280 professionals and students

The registration fees include material of the Workshop, shuttle transportation from and to Pisa or Florence, ice-breaker party, coffee breaks, three lunches, and one social dinner.

Payment form will be available with the second circular

Cancellations: Requests for cancellation with a fee refund (less a €30 processing fee) will only be accepted through 5 October 2009. Those who fail to attend and do not notify the IRSPS prior to the 5 October deadline will forfeit their full fee.

The registration will be available in the 2nd circular. Meanwhile, we ask you to inform us about your intention to participate in the conference. Please fill in on-line the [pre-registration form](#).

Accommodations

A block of rooms will be reserved for the workshop participants at the Il Ciocco Hotel and Resort. Visit the web site: www.ciocco.it. It will be possible to book the accommodation in the 2nd circular that will be available on 30 April.

Field Trip

A two-day field trip is planned after the Workshop. In this field trip we will visit Permian to Tertiary outcrops of Tuscany ranging from continental to deep-sea turbidites. The nights during the field trip will be spent in Il Ciocco. Therefore, excursion participants have to take care of their own reservations.

The field trip registration form will be available in the second circular.

Abstract submission and contributions

Due to the “working” format of the workshop, we have set up an early abstract deadline. However, abstracts also will be accepted up to the late abstract deadline, though abstracts submitted near this later deadline are less likely to be included for oral presentations.

Potential contributors and participants are invited to contact Angelo Pio Rossi (address below) for suggestions, proposals, and ideas. In addition, other forms of contribution are welcomed, such as software demonstrations, maps, digital maps, etc.

Abstract deadline 31 July 2009

Late Abstract deadline 30 September 2009

Schedule

First circular	2 April 2009
Second circular	30 April 2009
Abstract deadline	31 July 2009
Registration deadline	31 July 2009
Field trip registration	31 July 2009
Preliminary programme	5 August 2009
Late abstract deadline	30 September 2009
Late registration deadline	30 September 2009
Definitive programme	5 October 2009

Contacts

The Workshop information is available on: <http://www.irspis.unich.it/education/mapping09>

Science and programme:

Angelo Pio Rossi
International Space Science Institute (ISSI)
Hallerstrasse 6, CH-3012 Bern, CH

Ph: +41-(0)31-631-3254
Fax: +41-(0)31-631-4897
Email: arossi@issibern.ch

Field trip:

Gian Gabriele Ori
IRSPS
Universita' d'Annunzio
Viale Pindaro 42
65127 Pescara Italy

Ph: +39-085-453-7890
Fax: + 39-085-453-7545
Email: ggori@irspis.unich.it

Logistics:

Stefania Celenza
IRSPS
Universita' d'Annunzio
Viale Pindaro 42
65127 Pescara Italy

Ph: +39-085-453-7500
Fax: + 39-085-453-7545
Email: celenza@irsps.unich.it

Adele Graziani
Agenzia Spaziale Italiana
Viale Liegi 26
00198 Roma

Ph: +39-06-856-7236
Fax: +39-06-856-7219
Email: adele.graziani@asi.it