

The Mountains of Saint Francis

discovering the geologic events
that shaped our Earth



NIR – Network on Impact Research,
A PhD-student course with field excursions

Coldigioco, October 3-9, 2009

A cruise around the Umbria-Marche Apennines of Italy reading the
geologic history of impacts and mass extinctions written in the
most spectacular and famous sedimentary rock outcrops

organized by
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Program

Day 1 - Arrival at the Geological Observatory of Coldigioco in midday; tour of the Observatory; seminar on the geologic and sedimentary evolution of the Northeastern Apennines.

Day 2 - 1 hour seminar on regional neotectonics and recent speleologic research; field trip across the Marche Ridge with stops in exemplar outcrops of the sedimentary succession: stop 1) the Miocene Laga Flysch outcrop of Colle Pietro; Stop 2) the Upper Cretaceous-Lower Tertiary Scaglia Rossa pelagic succession at Frontale, including the Maastrichtian inoceramids event, the K/T boundary, the Lower Tertiary megaslumps and turbidites, the Paleocene/Eocene events; 3) the Bonarelli Event (Oceanic Anoxic Event 2); 4) the Maiolica Formation (Faraoni Level and Selli Level (OAE1) events; 5) the Jurassic succession and the horst and graben paleogeography; 6) Guided tour of the Frasassi giant cave complex.

Day 3 - Field trip across the U-M Apennines to Gubbio; Stop 1) The Toarcian anoxic event; 2) The Contessa classic succession from the Miocene flysch (Contessa megaturbidite marker) to the lower Jurassic Maiolica; 3) 1 hour seminar at lunch time on the K/T boundary in the famous Bottaccione Gorge, and visit the original K/T boundary outcrop. After dinner, 1 hour seminar on the cyclostratigraphy and orbital control of the mid-Cretaceous anoxic events, at Coldigioco.

Day 4 - Field trip to Furlo Regional Park; Stop 1) The Jurassic paleotopography of a horst and graben transition; Stop 2) The pelagic environment of the Scaglia Rossa (biocalcarenic turbidites and biomicritic pelagic limestones); Stop 3) The K/T boundary at Pietralata, and the Paleocene/Eocene events; Stop 4) The K/T megaslump at Torricella. After dinner at Coldigioco 1 hour seminar on the Eocene-Oligocene climate change and impacts.

Day 5 - Field trip to Monte Cònero Regional Park; Stop 1) The K/T boundary event recorded in a carbonate apron environment at Fornaci; 2) A close look to the K/T boundary at Fonte d'Olio; Stop 3) The Global Stratotype Section and Point for the Eocene-Oligocene boundary at Massignano; Stop 4) The Miocene pelagic succession of Monte dei Corvi, and the GSSP for the Turonian-Serravallian boundary; Stop 5) The Messinian Salinity Crisis at Mezzavalle.

Day 6 - 1 hour seminar on Impact Stratigraphy (Searching for the needle in the haystack of the stratigraphic record); 1 hr seminar on fossil meteorites and extraterrestrial chromite; preparation and study under a microscope of thin sections, smear slides, and washed residues of the K/T boundary and Late Eocene impact layers; open discussion with questions and replies on the various notions acquired during the course.

Day 7 - Departure

Logistics

B&B double rooms at the forestry of the ancient village of Coldigioco, Marche region, Italy
Brown bag lunches in the field
Dinner at local regional cuisine restaurant
PPT seminars at the Margolis Lecture Hall of OGC
Field trips in minivans
Short hikes

Registration

No. of participants : 16
Deadline for Registration: June 27
Cost: Participants from NIR participating countries register for free (travel and stay paid by NIR); prospective participants from outside the NIR region may be considered for vacant seats.

Recommended reading

Walter Alvarez, The Mountains of Saint Francis
W.W. Norton & Co., New York - London, 304 p., 20 euro