Solar variability and Earth's climate

Villa Mondragone, Monte Porzio Catone, June 27 - July 1, 2005

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CAWSES Climate and Weather on the Sun-Earth System

FOREWORD

'Illud item non est mirandum, qua ratione
tantulus ille queat tantum sol mittere lumen,
quod maria ac terras omnis caelumque rigando
compleat et calido perfundant cuncta vapore.'

Lucrezio, De Rerum Natura, V, 592-594

'It should not be an object of wonder, for
what reason does the Sun, so small,
yet throw such a powerful light,
that it fills the sea, the land and the sky,
and spreads its warmth upon all things.'

The conference "Solar Variability and Earth's Climate" was held at the Villa Mondragone Conference Center, in Monte Porzio Catone (Rome, Italy) from June 27th to July 1st, 2005. It provided a rare opportunity to join together the community of "solar" astronomers, with those of reaserchers working on terrestrial atmosphere and climate studies. Along the five days of the conference, about 120 people reviewed results on the leading topics of solar variability, climate variations and Sun-Earth connections. Space measurements of solar irradiance cover more than two and half solar cycles, providing a very important dataset for both solar research and climate studies. Much has been learned about total and spectral solar irradiance variability at short-term scales of weeks to months, as well as the importance of these variations on the Earth's thermal environment. However the knowledge of longer-term solar variations and their underlying mechanims and the role of these variations on the Earth's climate are topics of much greater uncertainty and discussion.
The Villa Mondragone has been a wonderful setting for a lively and interesting conference. The program and location were designed to stimulate discussions among the participants. These have been a stricking and extremely positive feature of the conference. The task was successfully attained. We hope everybody returned home full of ideas and work to do.
We acknowledge the precious suggestions of the scientific organizing committee, that so effectively helped in a fully successful and enjoyable conference. We also warmly thank all the sponsors. The conference would have not been possible without the heavy work of Valentina Penza, Mauro Centrone, Fabrizio Giorgi, Corrado Perna, who, with the help of many others colleagues of the Rome Observatory, took care of all the practical aspects of its organization.
The conference was dedicated to the memory of Bruno Caccin, an excellent teacher, refined researcher, esteemed friend.

Ilaria Ermolli, Judit Pap and Peter Fox