Coimbra Solar Physics Meeting „Ground based Solar Observations in the Space Instrumentation Era“, 5 - 9 October 2015, Coimbra, Portugal

The 2015 Coimbra Solar Physics Meeting (CSPM-2015) on “**Ground based Solar Observations in the Space Instrumentation Era**” will be held during 5 - 9 October 2015 in Coimbra, Portugal.

The meeting will be hosted by the University of Coimbra (http://www.uc.pt/en), one of the oldest European universities (founded in 1290), located in the central region of Portugal, between Lisbon (200 km to the south) and Porto (100 km to the north) and about 40 km from the Atlantic Ocean coast at Figueira da Foz.

Full-disk spectroheliograms have been produced routinely by the Astronomical Observatory of the University of Coimbra (Observatório Astronómico da Universidade de Coimbra - OAUC),in the Ca II K-line (K1 and K3) since 1926 and in 1990, regular observations in the Hα line have also started. In order to celebrate the 80th anniversary of the first spectroheliographic observations in Coimbra , in 2006, the OAUC organized a first Coimbra Solar Physics Meeting dedicated to “The Physics of the Chromospheric Plasmas” (CSPM-2006) .

Now, we invite again a wide scientific community to join us in 2015, this time for discussing the state-of-art solar ground-based and space -based observing techniques and related topics. This meeting is included in the celebration of the 150 years of Geophysical Institute of the University of Coimbra.

Co-organizers:

- Geophysical and Astronomical Observatory, University of Coimbra (OGAUC)
- Center of Geophysics, University of Coimbra (CGUC, http://geofisico.dyndns.org/)
- Geo-Space Sciences Research Centre, University of Porto (CICGE, http://www.fc.up.pt/cicge/)
- CENTRA - Instituto Superior Técnico**,** Univ. de Lisboa, Portugal, (http://centra.tecnico.ulisboa.pt)
- Slovak Central Observatory, Hurbanovo, Slovakia (SCO, http://www.suh.sk)

Objectives

The Sun and its activity affect the entire heliosphere, including the Earth. Solar activity includes flares, coronal mass ejections (CMEs), eruptive prominences and filaments, outbursts at various spatial scales, sunspots, and plages. All these phenomena are driven by the magnetic field. Although these phenomena appear at time scales from seconds to months, the long-term variation of the magnetic field during the 11-year solar cycle modulates their frequency and space weather impact.

Solar magnetic fields can be investigated from ground and space. Ground based observations of solar magnetic field using polarimetry has a long history, contributing to the understanding of long-term behaviour of the Sun. Coronal phenomena are driven by the dynamo-generated fields that show large-scale organization.

This CSPM-2015 scientific meeting will cover various aspects of solar dynamic phenomena which are well observed over the entire electromagnetic spectrum: white-light, Hα, Ca II, and radio from ground and in a variety of other wavelengths (white light, UV and EUV, and X-rays) from space. Emphasis will also be placed on instrumentation, observing techniques, and solar image processing techniques. The long-term (cyclic) evolution of solar magnetism and its consequence for the solar atmosphere, eruptive phenomena, solar irradiation variations, and space weather, will be in focus. Here, special attention will be devoted to the long-term observations made in Coimbra and also to the results of the SPRING / SOLARNET and SCOSTEP VarSITI studies. In particular, the weak solar activity during the current solar maximum will be discussed. Finally, a session will be specially dedicated to new solar instruments (both ground-based and space-borne) that will give access to unexplored solar atmospheric features and dynamic phenomena over the coming years.

The **conference programme** will include the following sessions:

Session 1: **Observations of the Sun** (quiet and active Sun, magnetic fields, high-resolution (polarimetric) observations and transient phenomena from the photosphere to the chromosphere and corona)
Session 2: **Solar image management, spectro-polarimetric and processing techniques** (overview of image management, spectro-polarimetric and processing techniques including tutorials)
Session 3: **Theory and modeling - comparison to observations** (constraints from observations)
Session 4: **Long-term variations of the Sun** (long-term (cyclic) evolution of solar magnetism and its consequence for the solar atmosphere, eruptive phenomena, solar irradiation variations, and space weather)
Session 5: **Facilities for ground-based and space solar observations** (existing and new facilities)

PRELIMINARY SCIENTIFIC PROGRAMME OF THE COIMBRA SOLAR PHYSICS MEETING

Date	**Morning (9.00-12.30)**	**Afternoon (14.30-18.00)**	**Evening**
Sun, 4 Oct	Arrival	Arrival, **18.00-20.00:** Registration and welcome drink	Meeting of the SOC/LOC
Mon, 5 Oct	**Session 1**: Observations of the Sun	**Session 1**: Observations of the Sun	Welcome reception
Tue, 6 Oct	**Session 1**: Observations of the Sun	**Session 2**: Solar image management, spectro-polarimetric and processing techniques	
Wed, 7 Oct	**Session 3**: Theory and modeling – comparison to observations	**Excursions**: Spectroheliograph – Geophysical and Astronomical Observatory; Conimbriga – ruins of the ancient roman town	
Thu, 8 Oct	**Session 3**: Theory and modeling – comparison to observations **Session 4**: Long-term variations of the Sun	**Session 4**: Long-term variations of the Sun **Thomas Metcalf Lecture**	Conference dinner
Fri, 9 Oct	**Session 4**: Long-term variations of the Sun **Session 5**: Existing and new facilities for ground-based and space solar observations	**Session 5**: Existing and new facilities for ground-based and space solar observations	Meeting of the SOC/LOC

DETAILED PROGRAMME

Sunday, 4 October

Arrival, ***18.00 -20.00:*** Registration and welcome drink
Evening: Meeting of the SOC/LOC

Monday, 5 October

Morning (8.45 -12.30)

Welcome addresses

***Session 1: Observations of the Sun*:**
Chairperson: TBD

Invited Review 1: Quiet Sun and its dynamics as viewed from the ground and from space - **K. Tziotziou**
I. Kontogiannis, G. Tsiropoula, K. Tziotziou: A study of a quiet solar network region structure and dynamics using ground and space based observations
R. Gafeira, A. Lagg, M. van Noort, S. K. Solanki: Temporal variations in small scale chromospheric fibrils observed by Sunrise II
T.M.D. Pereira et al.: Clashing views of spicules and fibrils

Coffee break 10.35 – 11.05 (Poster viewing)

Invited Review 2: Magnetic flux emergence in the quiet Sun - **L. Bellot Rubio**
M. Bodnárová, D. Utz, J. Rybák: Possible chromospheric response to the dynamics of photospheric G-band bright points
Invited Review 3: Quiet Sun magnetism: a new perspective from GRIS / GREGOR - **A. Lagg**

12.30 – 14.30 Lunch

Afternoon (14.30 - 18.00)

***Session 1: Observations of the Sun*:**
Chairperson: TBD

Invited Review 4: Sunspot structure and evolution - **C. Denker**
M. Verma, C. Denker, S.J. González Manrique, M. Sobotka and the GREGOR Team: High-resolution 3D flow fields around solar active regions
P. Romano, V. Capparelli, M. Falco, S.L. Guglielmino, A. Jhel, M. Murabito, F. Zuccarello: Study of photospheric and chromospheric dynamics using high resolution spectropolarimetric observations
C. Robustini, J. Leenaarts, J. De la Cruz Rodriguez, L. Rouppe Van Der Voort: Peacock jets above the light bridge of a sunspot

Coffee break 16.05 – 16.35 (Poster viewing)

M. Sobotka, J. Dudík, C. Denker, H. Balthasar, J. Jurčák, W. Liu, and the GREGOR Team: Slipping reconnection in a solar flare observed with GREGOR
G. Trottet, **J.-P. Raulin**, A. MacKinnon, C.G. Giménez de Castro, P.J. Simões, D.Cabezas, V. de La Luz, M. Luoni, P. Kaufmann: Origin of the 30 THz emission during the 2012 March 13 solar flare at 1720 UT
P. Kotrč, P. Heinzel (1), O. Procházka: On measurements of continuum flux in solar flares. Instrument and first results

Evening: Welcome reception

Tuesday, 6 October

Morning (9.00 - 12.30)

***Session 1: Observations of the Sun*:**
Chairperson: TBD

Invited Review 5: Observational needs for understanding solar magnetic activity and the formation of large-scale transient events - **L. van Driel-Gesztelyi**
P.K. Manoharan: Radial evolution of coronal mass ejections in the inner heliosphere
R.D. Cunha-Silva, **F.C.R. Fernandes**, C. L. Selhorst: Shock wave driven by CME evidenced by metric type II burst and EUV wave

Coffee break 10.15 – 10.45 (Poster viewing)

Invited Review 6: The need for synoptic solar observations from the ground - **A. Pevtsov**
L.O.T. Fernandes, P. Kaufmann, E. Correia, C. G. Giménez de Castro, A. Marun, P. Pereyra, J.-P. Raulin, A.B.M. Valio: Comparative study of solar bursts at sub-THz frequencies
P. Schwartz, P. Heinzel, S. Jejčič, J. Rybák, P. Kotrč, F. Fárník, Yu. A. Kupryakov, E. E. DeLuca, L. Golub, P.R. Jibben, U. Anzer, A.G. Tlatov, S.A. Guseva: Is it possible to use the green coronal line instead of X rays to cancel an effect of the coronal emissivity deficit in estimation of the prominence total mass from decrease of the EUV-corona intensities?
A. Kobelski, T.S. Bastian: Probing Solar wind turbulence with the Jansky Very Large Array

12.30 – 14.30 Lunch

Afternoon (14.30 - 18.20)

***Session 2: Solar image management, spectro-polarimetric and processing techniques*:**
Chairperson: TBD

Invited Review 1: Image restoration techniques for solar ground-based imaging - **M. Löfdahl**
B. Schmieder, N. Labrosse, P. Levens, A. Lopez Ariste, S. Gunár: Magnetic field and plasma diagnostics from coordinated prominence observations
Invited Review 2: The effects of instrumental properties on Stokes Inversions - **M. van Noort**
A. Hamada, T. Asikainen, I. I. Virtanen and K. Mursula: Identifying coronal holes from synoptic maps of SOHO/EIT and SDO/AIA EUV images
T. Barata, P. Pina, S. Carvalho, R. Gafeira, A. Garcia: Ground based observations of sunspots from the observatory of Coimbra: evaluation of different automated approaches to analyse its datasets

Coffee break 15.55 – 16.25 (Poster viewing)

Invited Review 3: The visualization of solar data: volume, variety, and value - **J. Ireland**
J. Palacios: Solar eruptive events as seen by the Spanish Space Weather Service SeNMEs
Invited Review 4: DKIST data center - **K. Reardon**

Wednesday, 7 October

Morning (9.00 - 12.30)

Session 3: Theory and modeling - comparison to observations
Chairperson: TBD

Invited Review 1: Modeling the Mg II h & k lines observed by IRIS and the Ca II H & K lines observed from the ground - **J. Leenaarts**
A. Sukhorukov, J. Leenaarts: Implementation of partial frequency redistribution effects for chromospheric resonance spectral lines in 3D model atmospheres
N. Vitas, E.Khomenko: Solar Magnetoconvection simulated with the MANCHA code

Coffee break 10.20 – 10.50 (Poster viewing)

Invited Review 2: On the role of MHD waves in heating localised magnetic structures: Where are we? - **R. Erdélyi**
D. Sokoloff: Helicities as drivers of solar dynamo and cycle variations
D. Passos: Meridional circulation dynamics: comparing observations and results from EULAG global 3D MHD simulations
M. Loukitcheva: Probing the Sun with ALMA: observations and simulations

12.30 – 13.30 Lunch

Afternoon (13.45 - 19.00)

Excursions: Spectroheliograph – Geophysical and Astronomical Observatory of the UC; Conimbriga – ruins of the ancient roman town

Thursday, 8 October

Morning (9.00 - 12.30)

Session 3: Theory and modeling - comparison to observations
Chairperson: TBD

Invited Review 3: Numerical simulations of dynamic phenomena in the solar corona - **T. Török**
S. T. Wu, N. Gopalswamy: What Additional Measurements Are Needed for the Magnetohydrodynamic (MHD) Simulation of Solar Atmospheric Dynamics?
J. Thalmann, Y. Su, **M. Temmer**, A.M. Veronig: Exceptions to the rule: the X-flares of AR 2192 lacking coronal mass ejections
I. Chifu, B. Inhester, T. Wiegelmann: Coronal magnetic field modeling using stereoscopy constraints

Coffee break 10.35 – 11.05 (Poster viewing)

Session 4: Long-term variations of the Sun

Invited Review 1: Long term solar activity - **I. Usoskin**
F. Clette, L. Lefévre, E.W. Cliver, L. Svalgaard: The revised sunspot number: new properties and new data standards
N. Gopalswamy, S. Yashiro, and S. Akiyama: Prominence eruptions observed by ground- and space-based observatories
A.Tlatov, K. Kuzanyan, V. Vasilyeva: Tilt angles of solar filaments over the century: 1919-2014

12.30 – 14.30 Lunch

Afternoon (14.30 - 17.20)

Invited Review 2: Long-term Synoptic Observations of CaII-K and Magnetic Flux - **L. Bertello**
T. Chatzistergos, I. Ermolli, S.K. Solanki, N.A. Krivova: Exploiting historical Ca II K spectroheliogram archives: Preliminary results from four archives
Invited Review 3: Space Weather using ground based data - **A. Veronig**

Coffee break 15.55 – 16.25 (Poster viewing)

R.F. Pinto, A. Rouillard: The slow and fast solar wind during the activity cycle
A. Morozova, J.J. Blanco, P. Ribeiro: Co-variability of the atmospheric and geophysical parameters in mid-latitude troposphere
[THOMAS METCALF LECTURE] N. Thakur: GOES as an indicator of ground level enhancements and the high energy solar energetic particles entering Earth

Evening: Conference dinner in the "Palacio S. Marcos", an old Portuguese edifice located at 20 km from Coimbra.

Friday, 9 October

Morning (9.00 - 12.30)

Session 4: Long-term variations of the Sun
Chairperson: TBD

Invited Review 4: Variations of the solar irradiance - **S.K. Solanki**
J. Padmanabhan: Declining Solar Polar Fields and their Signatures in the Solar Wind: Implications to near Earth Space
T. Barlyaeva, P. Lamy, A. Llebaria: The State of the Corona during the Weak Solar Cycle 24: the View from LASCO Images

Coffee break 10.15 – 10.45 (Poster viewing)

Session 5: Facilities for ground-based and space solar observations

Invited Review 1: The GREGOR Solar Telescope - **W. Schmidt**
H.-P. Doerr: High-precision spectroscopy with extremely accurate wavelength calibration: centre to limb variation of line shapes and convective shifts
Invited Review 2: European Solar Telescope (EST) - **M. Collados**

Afternoon (14.00 - 16.30)

Invited Review 3: Chinese Giant Solar Telescope - **Y. Deng**
M. van Noort: MiHI: a new imaging spectrograph
Invited Review 4: Solar Orbiter - Exploring the Sun-Heliosphere Connection - **D. Müller**
Invited Review 5: Science Objectives and Instrument Designs of the SOLAR-C Mission - **Y. Suematsu**
Conclusions of the Meeting

Evening: Meeting of the SOC/LOC

SOC - SCIENTIFIC ORGANIZING COMMITTEE

J. Aboudarham (OBSPM, Paris-Meudon, France)
F. Clette (ROB, Brussels, Belgium)
I. Dorotovič (OGAUC/CGUC, Coimbra; UNINOVA-CA3, Caparica, Portugal; SCO, Hurbanovo, Slovakia) - **co-chair**
C. Fischer (KIS, Freiburg, Germany)
L. Fletcher (University of Glasgow, UK)
N. Gopalswamy (NASA/GSFC, Greenbelt, USA)
A. Kučera (AI SAS, Tatranská Lomnica, Slovakia) - **co-chair**
D. Maia (CICGE, University of Porto, Portugal)
M. Sobotka (AI ASCR, Ondřejov, Czech Republic)
Y. Suematsu (NAOJ, Tokyo, Japan)
M. Temmer (IGAM, University of Graz, Austria)
J. Trujillo Bueno (IAC, La Laguna, Tenerife, Spain)
G. Tsiropoula (NOA, Athens, Greece)
B. Vršnak (Hvar Observatory, Zagreb, Croatia)

LOC - LOCAL ORGANIZING COMMITTEE

T. Barata (OGAUC/CITEUC, Coimbra, Portugal)
S. Carvalho (OGAUC/ CITEUC, Coimbra, Portugal)
I. Dorotovič (OGAUC/ CITEUC, Coimbra; UNINOVA-CA3, Caparica, Portugal; SCO, Hurbanovo, Slovakia)
T. Esperança (OGAUC, Coimbra, Portugal)
J. Fernandes (OGAUC/ CITEUC, Coimbra, Portugal) – **Chair**
A. Garcia (OGAUC, Coimbra, Portugal)
D. Maia (CICGE, University of Porto, Portugal)
A. Morozova (OGAUC/ CITEUC, Coimbra, Portugal)
D. Passos (CENTRA - Instituto Superior Técnico, Univ. de Lisboa, Portugal; GRPS, Univ. Montreal, Canada)

DEADLINES

- **15 November 2014** - First Announcement, web-site opens
  - Registration, hotel reservation, and abstract submission opens
- **30 April 2015** - Closing date for abstract submission I.
  (for those who are going to apply for financial support)
  - Closing date for financial support applications
- **20 June 2015** - Closing date for abstract submission II.
  (for those who do not apply for financial support)
  - Information on financial supports
  - Closing date for Thomas Metcalf SPD Travel Award applications
- **5 July 2015** - Information on accepted abstracts
  - Second Announcement (Programme Finalised)
- **15 July 2015** - Closing date for early bird registration
- **15 September 2015** - Closing date for late registration
  and late abstracts (can be accepted only as posters)
  - Closing date for hotel reservation
  - Final Announcement
- **4 October 2015** - Arrival, registration of participants
- **5 October 2015** - Meeting starts
- **9 October 2015** - Meeting ends
- **30 November 2015** - Submission deadline for proceedings manuscripts

FINANCIAL SUPPORT

This was distributed on base of previous applications and according to recommendations of the SOC.

PROCEEDINGS

The proceedings of the Coimbra Solar Physics Meeting 2006 „The Physics of Chromospheric Plasmas“ will be published in the ASP (Astronomical Society of the Pacific) Conference Series [http://www.astrosociety.org/pubs/cs/confseries.html]. The editors are I. Dorotovič, C. Fischer, and M. Temmer. The deadline for manuscript submission will be **30 November 2015**. The style of manuscripts (LATEX style files) will be defined in the Final Announcement.

ACCOMMODATION FACILITIES

The LOC have an agreement with the travel agency ABREU-PCO to provide registration, hotel reservation, and social event arrangements. Special hotel rates have been negotiated for the participants of the meeting in several hotels. To register and reserve a room, please fill in the online form https://pco.abreu.pt/CLIENTES/abreu/formularios/form_6610504967.php

(note: the deadline for early bird registration is 15 July 2015 and the deadline for hotel reservation is 31 August 2015). If you prefer to book a cheaper accommodation than offered by ABREU-PCO, please follow the instructions at

http://www.mat.uc.pt/~cspm2015/registration_accommodation.html (in a paragraph starting with „Alternatively, ...").

VISA APPLICATIONS

Those who need visa (participants and/or accompanying persons) to enter Portugal have to contact a Portuguese Embassy well in advance. If you need a letter of invitation, please contact João Fernandes at: cspm2015@mat.uc.pt and jmfernan@mat.uc.pt.

We look forward to seeing you in Coimbra.

João Fernandes (OGAUC/CITEUC, Coimbra, Portugal)

Ivan Dorotovič (OGAUC/ CITEUC, Coimbra; UNINOVA-CA3, Caparica, Portugal; SCO, Hurbanovo, Slovakia)

Dalmiro Maia (CICGE UP, Porto, Portugal)

Dário Passos (CENTRA - IST, Univ. de Lisboa, Portugal; GRPS, Univ. Montreal, Canada)