



High Energy Solar Particle Events for Recasting and Analysis **HESPERIA**

Workshop on Solar Energetic Particle Events Paris Observatory, 27 Feb – 2 Mar 2017 Programme

**EU's Horizon 2020 Research and Innovation Programme,
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Monday February 27

14:00 Opening

14:15 O. Malandraki: The HESPERIA project: an overview

14:30 C. Sarlanis: The HESPERIA host server set-up

15:00 N. Vilmer: The FLARECAST project

15:30 I. Usoskin: Extreme solar particle events: What is the worst case scenario?

16:15 **Coffee break**

SEP Forecasting (1)

16:45 A. Papaioannou: SEP Data driven statistical approaches for Solar Energetic Particle (SEP) Events forecasting

17:15 E. Cliver: A Short-term Forecast Tool for $\geq S2$ (≥ 100 pfu) Solar Proton Events: Preliminary Report

17:45 General discussion

18:00 **Adjourn**

Tuesday February 28

SEP Forecasting (2)

09:00 M. Nunez: Predicting the occurrence of GLE events

09:30 J. Labrenz: Near realtime forecasting of MeV protons on the basis of sub relativistic electrons

10:00 R. Bütikofer: GLE Inversion Software – Assessment of Source and Transport Parameters Based on Neutron Monitor Data

10:30 A. Papaioannou: HESPERIA data retrieval tool demonstration

10:45 **Coffee break**

11:30 K.-L. Klein: Microwave observations for forecasting energetic particles from the Sun

12:00 M. Dierckxens: SEP Scoreboard: Real-time Forecasting Validation

12:30 General discussion: SEP forecasting, HESPERIA, perspectives

13:00 **Lunch**

High-energy particles at the Sun: EM emissions

14:30 G. Share: Characteristics of 29 Sustained-Emission >100 MeV Gamma-Ray Events Associated with Impulsive Solar Flares

15:00 P. Zucca: A search for radio and X-ray counterparts of long-lasting solar gamma-ray emission from relativistic protons

15:30 A. Mackinnon: Secondary Electrons from Energetic Flare Ions

16:00 **Coffee break**

17:00 Guided tour of Paris Observatory (TBC)

Wednesday March 1

High-energy particles from the Sun: SEPs

09:00 E. Valtonen: Energy Spectra and Abundance Ratios of Heavy Ions in HESPERIA Gamma-Ray Events

09:30 K. Tziotziou: Multi-spacecraft solar energetic particle analysis of FERMI gamma-ray flare events

10:00 P. K uhl: Solar Energetic Particle Events with Protons > 500 MeV between 1995 and 2015 Measured with SOHO/EPHIN

10:30 **Coffee break**

11:00 A. Afanasiev: Testing the shock origin of protons responsible for solar long-duration gamma-ray events

11:30 A. Aran: Modelling The 2012 January 23 And 2012 May 17 SEP Event With The Shock-And-Particle Model

12:00 A. Rouillard: CME and shock tracking during FERMI/LAT gamma-ray events (title TBC)

12:30 General discussion: High-energy particles at and from the Sun

13:00 **Lunch**

14:30 J. Kartavykh: Modeling of Energetic Particle Transport and Acceleration at Interplanetary Shock Waves in Mixed Solar Particle Events

15:00 S. Dalla: Solar Electron Deceleration in Interplanetary Space

15:30 W. Dr oge: Multi-spacecraft observations and transport modeling of solar energetic particles in the inner Heliosphere

16:00 **Coffee break**

16:30 D. Strauss: Simulating Solar Energetic Particle Transport

17:00 D. Pacheco: Interplanetary Transport of Solar Electron Events Detected over a Narrow Range of Heliolongitudes

17:30 General discussion: Particle transport modelling

18:00 Adjourn

Thursday March 2

09:00 N. Dresing: Long-lasting solar energetic electron injection during the 26 Dec 2013 widespread SEP event

09:30 S. Masson: Flare-accelerated particles' escape in 3D solar eruptive events

10:00 O. Malandraki: Joint Ne/O and Fe/O Analysis to Diagnose Large Solar Energetic Particle Events during Solar Cycle 23

10:30 R. Vainio: Why is Solar Cycle 24 Inefficient in Producing High-Energy Particle Events?

11:00 Coffee break

11:30 General discussion: Political recommendations of the HESPERIA project – to be introduced by short presentations of the lead authors of the document

12:45 Closing

13:00 Lunch

Afternoon: HESPERIA consortium meeting (until Friday March 3, at noon)