

ISSI WORKSHOP ON THE SCIENTIFIC FOUNDATIONS OF SPACE WEATHER

PROGRAMME

Monday 27 June 2016

08:30-09:00	Registration in ISSI, Hallerstrasse 6, 1 st floor	
09:00	Welcome and chairman	Rudolf von Steiger
09:15 - 09:30	Introduction to the Workshop	André Balogh
1. INTRODUCTION TO THE SCIENCE OF SPACE WEATHER		
09:30 - 10:15	What is space weather?	Hannu Koskinen
10:15 – 11:00	Past, present and future of space weather research	Louis Lanzerotti
<i>11:00 - 11:30 Coffee break</i>		
11:30 – 12:00	Importance and applications of space weather forecasting	Juha-Pekka Luntama
12:00 - 12:30	Current status and future prospects of space weather forecasting	Howard Singer
2. SOLAR PHENOMENA DRIVING SPACE WEATHER AND THEIR PREDICTABILITY		
12:30 - 13:00	The dynamics of solar/coronal magnetic fields	Lucie Green
<i>13:00-14:00 Lunch</i>		
	Chairman	
14:00 - 14:30	Solar eruptions	Bojan Vrsnak
14:30 - 15:00	Modelling Coronal Mass Ejections	Tibor Török
15:00 - 15:30	Solar flares and solar X-rays	Sâm Krucker
<i>15:30-16:00 Coffee break</i>		
16:00 - 16:30	Coronal holes and the origin of the fast solar wind	Sarah Gibson
16:30 – 17:00	The origin and variability of the slow solar wind	Steve Cranmer
<i>17:00 Welcome reception</i>		

3. PROPAGATION OF SOLAR PHENOMENA IN THE INNER HELIOSPHERE

	Chairman	
09:00 - 09:30	Interplanetary evolution of CMEs (1)	Ying Liu
09:30 - 10:00	Interplanetary evolution of CMEs (2)	Ward Manchester
10:00 - 10:30	Acceleration of solar energetic particles	Ludwig Klein
10:30 - 11:00	Heliospheric propagation of solar energetic particles	Silvia Dalla

11:00-11:30 Coffee break

11:30 - 12:00	Generation of strong southward magnetic fields in interplanetary space	Emilia Kilpua
12:00 - 12:30	Stream-stream and Corotating Interaction Regions	Rudolf von Steiger
12:30 - 13:00	Interplanetary shocks	André Balogh

12:00-14:00 Lunch

**4. THE GEOEFFECTIVENESS OF SOLAR PHENOMENA:
GLOBAL AND REGIONAL MAGNETOSPHERIC RESPONSE**

	Chairman	
14:00 - 14:30	Global magnetospheric modelling	Michael Hesse
14:30 - 15:00	Space weather dynamics of the magnetosphere (1)	Jonathan Eastwood
15:00 - 15:30	Space weather dynamics of the magnetosphere (2)	Rumi Nakamura
15:30 - 16:00	Energetic particle effects in the magnetosphere	Joseph Fennell

15:30 - 16:00 Coffee break

16:00 - 16:30	Space weather effects in the radiation belts (1)	Allison Jaynes
16:30 - 17:00	Space weather effects in the radiation belts (2)	Richard Horne
17:00 - 17:30	Space weather effects in the ring current	Natalia Ganushkina

5. THE GEOEFFECTIVENESS OF SOLAR PHENOMENA: UPPER ATMOSPHERE/IONOSPHERIC EFFECTS

	Chairman	
09:30 - 10:00	Total electron content effects in the upper atmosphere	John Foster
10:00 - 10:30	Space weather effects: ionospheric irregularities (1)	Mark Lester
10:30 - 11:00	Space weather effects: ionospheric irregularities (2)	Joseph Huba

11:00-11:30 Coffee break

11:30 - 12:00	Energetic particle effects on the upper/middle atmosphere	Pekka Verronen
12:00 - 12:30	Space weather effects on atmospheric temperature and density variations	Jan Sojka

12:30 - 13:00 [Young scientists' presentations](#)

13:00 Lunch

14:00 Free time to visit the attractions of Bern
Also: All ISSI facilities are available for small group discussions

19:00 Workshop dinner: Kornhauskeller restaurant, Bern

Thursday 30 June 2016

**6. THE GEOEFFECTIVENESS OF SOLAR PHENOMENA:
GEOMAGNETIC (dB/dt) RESPONSES, THEIR MECHANISMS AND
PREDICTABILITY**

	Chairman	
09:30 - 10:00	Ionospheric current systems	Brian Anderson
10:00 - 10:30	Dynamic magnetospheric forcing	Robert McPherron
10:30 - 11:00	Geomagnetically induced currents: the ground challenge of forecasting space weather	Ari Vijanen

11:00-11:30 *Coffee break*

DISCUSSION

11:30 - 13:00	What we know and don't know about the predictability of solar and magnetospheric phenomena	Discussion led by Astrid Veronig and Hannu Koskinen
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13:00 – 14:00 *Lunch*

7. ANTHROPOGENIC SPACE WEATHER EFFECTS

	Chairman	
14:00 - 14:30	High altitude nuclear explosions	Tamás Gombosi
14:30 - 15:00	RF effects on the near-Earth space environment	Philip Erickson

8. EXTREME SPACE WEATHER EVENTS

15:00 - 15:30	Statistics of extreme events	Pete Riley
15:30 - 16:00	Cradle to grave story of extreme event(s)	Daniel Baker

15:30-16:00 *Coffee break*

**9. SPACE CLIMATE - LONG TERM VARIATIONS IN SPACE WEATHER
EFFECTS**

16:00 - 16:30	The changing Sun	Ed Cliver
16:30 – 17:00	The changing terrestrial B-field	Mioara Manda
17:00 - 18:30	General outline of ISSI book, organisation, followed by splinter groups for book chapters	Rudolf von Steiger

Friday 1 July 2016

10. SPACE WEATHER ELSEWHERE

	Chairman	
09:30 - 10:00	Space weather at other planets in the solar system	Nathan Schwadron
10:00 - 10:30	What can we learn from the activity of sun-like stars	Manuel Güdel
10:30 - 11:00	Reports of young scientists	
11:00 - 11:30	<i>Coffee break</i>	
11:30 - 12:30	Reports from splinter groups, authors Book plans, actions, schedule	Led by Convenors
12:30	<i>Close of Workshop</i>	