First Planetary Science and Instrumentation Workshop

Polish Academy of Sciences has both a renowned expertise on space instrumentation design and a quantity of researchers in planetary science. As Poland is entering ESA, new opportunities of collaborations between CBK PAN and ING PAN are emerging.

During this workshop, the participants, engineers and researchers, will exchange information and ideas in order to identify the areas where the technology skills meet the planetary science goals, in the objective of designing and building innovative instrumentation for space exploration. The engineers will present their domains of competence, achievements, and ongoing developments, especially for the new planetary scientists at ING PAN. The researchers will present their own field of research, methods of investigations, and ongoing activities, as well as what are the instruments they dream of that would allow significant improvement of the knowledge in their field. One or two ideas of future instrument development will emerge during a discussion at the end of the workshop. Later, working groups will have refined the science objective and technological design of these instruments and present them for critical assessment and decision to continue the adventure of instrument development and seek the required funding.

Organizing committee:
Jerzy Grygorczuk, CBK PAN
Joanna Gurgurewicz, ING PAN & CBK PAN
Małgorzata Królikowska-Sołtan, CBK PAN
Daniel Mège, ING PAN
Hans Rickman, CBK PAN
Karol Seweryn, CBK PAN

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15-16.1.2013 Warsaw, Poland

PROGRAM

Day 1
15 January 2013 (Tuesday)

8.30	Registration
9.00	Workshop opening *Marek Banaszkiewicz, director CBK PAN* *Marek Lewandowski, director ING PAN*
Current and Future Planetary Missions Chairman: *Marek Banaszkiewicz, CBK PAN*	
9.10	ESA Exploration Program *Marek Banaszkiewicz, CBK PAN*
9.30	MERTIS/BEPI COLOMBO experiment - Polish contribution *Piotr Wawer, CBK PAN*
9.50	The collaboration with Russians – Luna Resource project *Jerzy Grygorczuk, CBK PAN*
10.10	EChO payload instrument - proposal for M3 mission *Mirosław Rataj, CBK PAN*
10.30	Plasma environment exploration - Juice mission *Hanna Rothkaehl, CBK PAN*
10.50	European Sample Return mission – MarcoPolo-R *Karol Seweryn, CBK PAN*
11.10	Coffee Break

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Planetary Science I – Mars I Chairman: *Daniel Mège, ING PAN*	
11.40	Research in the WROONA Group *Daniel Mège, ING PAN*
12.00	Evolution of the paleoenvironmental conditions on Mars: Insight from Valles Marineris *Krzysztof Dębniak, ING PAN*
12.15	Evolution of the paleoenvironmental conditions on Mars: Spectral insight from basalt alteration features *Joanna Gurgurewicz, ING PAN & CBK PAN*
12:35	Evolution of the paleoenvironmental conditions on Mars: Experimental insight from basalt alteration features *Marta Skiścim, ING PAN*
12.50	Lunch
Planetary Science II – Mars II Chairman: *Joanna Gurgurewicz, ING PAN & CBK PAN*	
13.50	Mass-wasting processes on Earth and Mars: Landsliding. Interface processes during debris flow propagation *Timur Borikov, ING PAN*
14.05	Mass-wasting processes on Earth and Mars: Gravitational spreading. Observations and interpretations *Olga Kromuszczyńska, ING PAN*
14.20	Mass-wasting processes on Earth and Mars: Gravitational spreading. Numerical simulations *Magdalena Makowska, ING PAN*
14.35	Cold environments on Mars: Evolution of periglacial landforms related to climate change *Antoine Séjourné, ING PAN*
14.55	Cold environments on Mars: Possible interaction between salt and ice *Marion Massé, ING PAN*
15.15	Geology of impact craters on Mars *Natalia Zalewska, CBK PAN*
15.35	Influence the various kind of dust and aerosols on radiance spectra of astronomical objects *Maria Błęcka, CBK PAN*
15.55	Coffee Break

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Planetary Instrumentation I – Surface and subsurface mechatronic systems Chairman: *Jerzy Grygorczuk, CBK PAN*	
16.15	Penetrometers – CHOMIK and MUPUS type *Jerzy Grygorczuk et al., CBK PAN*
16.35	Mole penetrometers *Karol Seweryn et al., CBK PAN*
16.55	Ultra Light Manipulator *Bartosz Kędziora, Marta Tokarz, CBK PAN*
17.15	Visit in CBK labs
19.00	Social event

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Day 2
16 January 2013 (Wednesday)

Planetary Science III – Small bodies Chairman: *Hans Rickman, CBK PAN*	
9.00	Collision probabilities in the Solar System *Hans Rickman, CBK PAN*
9.20	Near Earth Objects & Potentially Hazardous Asteroids – currently existing missions *Małgorzata Królikowska-Sołtan, CBK PAN*
9.40	Comets observed with Herschel Space Observatory *Sławomira Szutowicz, CBK PAN*
10.00	(the topic will be provided later) *Ryszard Gabryszewski, Paweł Wajer, CBK PAN*
10.20	Coffee break
Planetary Instrumentation II – Geotechnical sensors Chairman: *Karol Seweryn, CBK PAN*	
11.00	Geotechnical investigations for planetary missions *Krzysztof Skocki, CBK PAN*
11.20	Determination of the mechanical properties of the regolith using Dynamic Cone Penetration method *Karol Seweryn, CBK PAN*
11.40	Determination of the regolith thermal conductivity coefficient in vacuum conditions *Agata Przepiórka, CBK PAN*
12.00	Granular structure determination using wave propagation method *Michał Malinowski, IGF PAN*
12.20	Sensors for planetary investigations *Roman Wawrzaszek, CBK PAN*
12.40	Mass spectrometer – first approach *Agata Nicolau-Kuklińska, CBK PAN*
13.00	Lunch break

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Discussion	
14.00	Science issues and instrumental solutions – identification of main orientations Identification of working groups Next meeting – date and objectives