

Report: BepiColombo Young Scientist Working Group Workshop

Location: Observatório da Universidade de Coimbra, Coimbra, Portugal

Date: 26/03/2019 - 28/03/2019

Workshop Organizing Committee: Go Murakami (JAXA/ISAS), Anna Milillo (INAF), Joana S. Oliveira (ESA), Daniel Heyner (TU-BS)

Introduction

The Young Scientist Working Group of BepiColombo (YSWG) consists of scientists from a wide scientific topics associated with the ESA-JAXA BepiColombo mission 'en route' to Mercury. The YSWG brings together young (by the state of mind, not by age) scientists that strive to solve remaining questions. The group aims to support the instrument PI teams and currently has 81 members. One objective of this working group is to gather and critically review the numerous publications derived from MESSENGER data.

Motivation/Workshop Aim

After the NASA-MESSENGER mission has improved our understanding of planet Mercury, there are still open important questions about the innermost planet of the solar system. Why does it possess such a large iron core? What is the nature of the dynamo operating in the interior? How do the Hollows at the surface form? What is the low-reflectance material spread around the planet? What drives the exosphere? These are some of the major scientific questions that need to be explored by the BepiColombo mission. Important discussions will allow to predict which dedicated BepiColombo instrument observations should be planned – with some of these especially requiring simultaneous measurements on both BepiColombo spacecrafts. Dedicated time for scientific discussions is very little during the existing science working team meetings of BepiColombo. Therefore, there is a true need of having separated scientific meetings.

Achievements of the workshop

- 1) All topics were addressed during the workshop: surface, surface, exosphere and dust environment, internal magnetic field, magnetosphere modelling, magnetosphere observations, Venus flyby science.
- 2) Creation of other subgroups related to surface and dust similar to the existing SHOTS subgroup that has the aim to compare and benchmark numerical magnetospheric simulations performed with different numerical codes. This group has defined two common scenarios which the individual modelers now compare. It has been found, that depending on the numerical scheme and boundary conditions, the global structure of the simulated magnetosphere can vary drastically.
- 3) The planned observations at the BepiColombo Venus flybys with simultaneous ground observations from Earth have been discussed.

- 4) Live-selection of science topics to be openly discussed.
- 5) Exposure of the host centre members to international community.
- 6) National press coverage of the meeting and space missions.

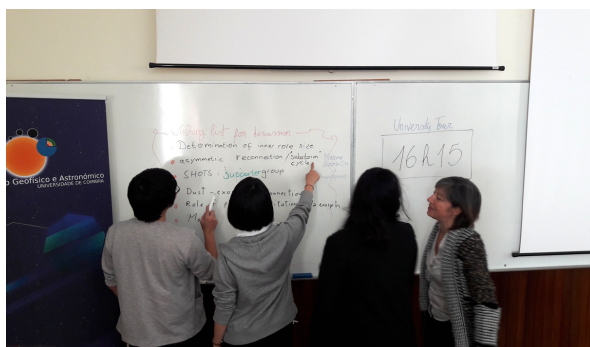
Feedback

Feedback from the participants about the workshop was very positive and encouraged us to organize further workshops in the future. In future meetings, we plan to have more time for free discussions on each day. The support of Europlanet is highly appreciated. Most of the granted support is spent on travel support as a lot of young scientists could not afford to join the workshop otherwise.

Website

All detailed information, such as the meeting agenda, can be seen in the workshop website at: <https://sites.google.com/view/bepi-ys-wg-workshop>

Pictures



Participants Statistics

Total number of participants	37
Number of participants of Inclusiveness states	11
Number of female participants	11
Number of male participants	26
Number of early career scientists	25
Participants from Industry	1
Amateur Participants	0
Participants from outside Europe	4

Participants List

BepiColombo: Young Scientist WG Workshop

Attendance list

#	Name	First Name	Institution	Country	Day 1 (Tue)	Day 2 (Wed)	Day 3 (Thu)	# Social Dinner	# Social Tour	Signature
1	Aizawa	Sae	Tohoku University	Japan	✓	✓	✓	✓	✓	Sae Aizawa
2	Anna	Milillo	INAF/IAPS	Italy	✓	✓	✓	✓	✓	Anno Milillo
3	Arlindo	Marques	EFACEC	Portugal	✓	✓	✓	✓	✓	Arlindo Marques
4	Barraud	Océane	Observatoire de Paris, CNRS	France	✓	✓	✓	✓	✓	Océane Barraud
5	Benkhoff	Johannes	ESA-ESTEC	Netherlands	✓	✓	✓	✓	✓	Johannes Benkhoff
6	Borin	Nicolò	Università degli Studi di Padova	Italy	✓	✓	✓	✓	✓	Nicolò Borin
7	Bott	Nicolas	LESIA - Observatoire de Paris	France	✓	✓	✓	✓	✓	Nicolas Bott
8	Claudia	Stangarone	Institute for Planetary Research, DLR	Germany	✓	✓	✓	✓	✓	Claudia Stangarone
9	Conway	Susan	Laboratoire de Planetologie et Geodynamique	France	✓	✓	✓	✓	✓	Susan Conway
10	Comet	Thomas	ESA-ESAC	Spain	✓	✓	✓	✓	✓	Thomas Comet
11	Dewey	Ryan	University of Michigan	United States	✓	✓	✓	✓	✓	Ryan Dewey
12	Dosa	Melinda	Wigner Research Centre for Physics	Hungary	✓	✓	✓	✓	✓	Melinda Dosa
13	Exner	Willi	Institute for Geophysics and extraterrestrial Physics	Germany	✓	✓	✓	✓	✓	Willi Exner

#	Name	First Name	Institution	Country	Day 1 (Tue)	Day 2 (Wed)	Day 3 (Thu)	# Social Dinner	# Social Tour	Signature
14	Fatemi	Shahab	IRF	Sweden	✓	✓	✓	✓	✓	Shahab Fatemi
15	Fraenz	Markus	MPI for Solar System Research	Germany	✓	✓	✓	✓	✓	Markus Fraenz
16	GARNIER	Philippe	IRAP	FRANCE	✓	✓	✓	✓	✓	Philippe Garnier
17	Hall	Graeme	University of Leicester	UK	✓	✓	✓	✓	✓	Graeme Hall
18	Heyner	Daniel	TU Braunschweig	Germany	✓	✓	✓	✓	✓	Daniel Heyner
19	Hirai	Takayuki	Chiba Institute of Technology, Planetary Exploration Research Center	Japan	✓	✓	✓	✓	✓	Takayuki Hirai
20	Ivanovski	Stavro	INAF-Astronomical Observatory of Trieste	Italy	✓	✓	✓	✓	✓	Stavro Ivanovski
21	Kazakov	Adrian	INAF-IAPS	Bulgaria	✓	✓	✓	✓	✓	Adrian Kazakov
22	Kolhey	Patrick	TU Braunschweig/IGeP	Germany	✓	✓	✓	✓	✓	Patrick Kolhey
23	Lindsay	Simon	University of Leicester	UK	✓	✓	✓	✓	✓	Simon Lindsay
24	Machado	Pedro	Instituto de Astrofísica e Ciências do Espaço	Portugal	✓	✓	✓	✓	✓	Pedro Machado
25	MANGANO	VALERIA	INAF	Italia	✓	✓	✓	✓	✓	Valeria Mangano
26	Mieth	Johannes Z. D.	Technische Universität Braunschweig	Germany	✓	✓	✓	✓	✓	Johannes Mieth
27	Moissl	Richard	ESA/ESAC	Spain	✓	✓	✓	✓	✓	Richard Moissl

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28	Murakami	Go	JAXA/ISAS	Japan	✓	✓	✓	✓	✓	<i>Go Murakami</i>
29	Oliveira	Joana	ESA	Netherlands	✓	✓	✓	✓	✓	<i>Joana Sofia Oliveira</i>
30	Pegg	David	The Open University	UK	✓	✓	✓	✓	✓	<i>David Pegg</i>
31	Peixinho	Nuno	Science Research of the University of Coimbra	Portugal	✓	✓	✓	✓	○	<i>Nuno Peixinho</i>
32	Pinto	Marco	Laboratório de Instrumentação e Física Experimental de Partículas	Portugal	✓	✓	✓	✓	○	<i>Marco Pinto</i>
33	Poh	Gang Kai	NASA GSFC/UMBC	United States	✓	✓	✓	✓	○	<i>Gang Kai Poh</i>
34	Rognini	Edoardo	INAF-IAPS	Italy	✓	✓	✓	✓	○	<i>Edoardo Rognini</i>
35	SUN	WEIJIE	University of Michigan, Ann Arbor	United States						
36	Suzanne	Imber	University of Leicester	UK	✓	✓	✓	✓	✓	<i>Imber Suzanne</i>
37	Timar	Aniko	Wigner Research Centre for Physics	Hungary	✓	✓	✓	✓	✓	<i>Aniko Timar</i>
38	Varatharajan	Indhu	DLR Berlin	Germany	✓	✓	✓	✓	✓	<i>Indhu Varatharajan</i>
39	Vaverka	Jakub	Charles University	Czech Republic	✓	✓	✓	✓	✓	<i>Jakub Vaverka</i>
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Note: two participants that were registered did not attend the meeting due to personal reasons.