

ESTEC/GEOVUSIE/ILEWG PLANETARY STUDENT DESIGN WORKSHOP: A TEACHER TRAINING PERSPECTIVE

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Abstract

An important role for education is to inform and create the right skills for people to develop their own vision, using their talents to the utmost and inspire others to learn to explore in the future. Great effort has been taken to prepare this interactive design workshop thoroughly. Three days in a row, starting with presentations of Artscience The Hague to ESA colleagues, followed by a Planetary research Symposium in Amsterdam and a student design workshop at the end complemented a rich environment with the focus on Planetary exploration.

The design workshop was organised by GeoVUsie students, with ESTEC and ILEWG support for tutors and inviting regional and international students to participate in an interactive workshop to design 5 Planetary Missions, with experts sharing their expertise and knowhow on specific challenging items:

1. Mercury - Post BepiColombo (with Sebastien Besse, ESA)
2. Moon South Pole Mission (with Bernard Foing, ESA)
3. Post-ExoMars - In search for Life on Mars (with Jorge Vago, ESA)
4. Humans in Space - Mars One investigated (with Arno Wielders, Space Horizon)
5. Europa - life on the icy moon of Jupiter? (with Bert Vermeersen, TU Delft)

Lectures were given for more than 150 geology students at the symposium "Moon, Mars and More" at VU university, Amsterdam (organized by GeoVUsie earth science students). All students were provided with information before and at start for designing their mission. After the morning session there was a visit to the exhibition at The Erasmus Facility - ESTEC to inspire them even more with real artifacts of earlier and future missions into space. After this visit they prepared their final presentations, with original results, with innovative ideas and a good start to work out further in the future.

A telescope session for geology students had been organized indoor due to rain. A follow-up visit to the nearby public Copernicus observatory was planned for another clear sky occasion.

Summary results

The interactive character of this setting was inspirational and motivating. A good method with vision to modernize school education and bring innovation to educators: they are the key promoters and facilitators for change in the culture of education. Tutors and mentors are very important to pave the way with more modern interactive learning, including:

1. Social Media
2. Online Learning
3. Creator Society
4. Data-driven learning
5. Virtual Assistance

The great importance of emerging technologies and their potential impact on and use in teaching, learning, and creative inquiry in pre-college education environments offer good prospects. The International Lunar Exploration Working Group (ILEWG) has given support to emphasize their vision, goal to "international cooperation towards a world strategy for the exploration and utilization of the Moon" by organizing and facilitating students, teachers, schools and universities with relevant material, ready to use in the classroom and inform the greater audience. This underlines the vision of the importance and responsibility to "draw in" education for primary, secondary and higher education on a more regular base and to implant space exploration on its widest scale and on a more sustainable way in the future. Developing and building a stronger network is crucial to gain technical personal for future Moon missions, samples return and research on other planets, moons or asteroids. This workshop

helped to give more outreach about current space projects and will have a follow-up.

The international and cooperative character was an innovative experience with enriching information and great promising students for more science and future space exploration.

Acknowledgements

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References

A video of highlights is available on:
"2. Planetary Design student workshop organized by VU Amsterdam GeoVusie/ESTEC/ILEWG"
<http://www.youtube.com/watch?v=NJxvHKcNeKo>