

SPACE EXPLORATION SYMPOSIUM (A3)
Moon Exploration – Part 1 (2A)

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OH VISIONS FOR FUTURE LUNAR EXPLORATION

Abstract

For millennia, the moon has been a target of humanity's visions and dreams. Impossible as it may have seemed to reach, John F. Kennedy had the vision to initiate the endeavor that led to six manned landings of the surface of our natural satellite. After a long pause, a similar vision has now again been voiced by ESA's Director General (Moon Village).

Also at OH, the moon has been an important goal since the inception of the company. It was a life-long passion of Manfred Fuchs, who founded the company together with his wife in 1981. After his passing away in 2014, OH commemorated his legacy with the Manfred Fuchs Memorial Mission, which successfully completed a lunar flyby and inspired people all around the world, being the first fully privately funded lunar mission.

Following these great visionaries, OH System has been working on Lunar projects for many years. The first of these steps, such as the Mona Lisa study for a lander system and the LUROP payload studies, were internally co-funded and then presented to the DLR Space Administration. Later, under ESA funding, OH investigated the NEXT Lunar Lander. In the frame of the resulting ESA Lunar Lander mission, OH then worked on the lander's power and communications systems and on the accommodation of its scientific payload.

Additionally, OH also lead the development of several of these payloads. The L-DEPP instrument package was developed with a team of European scientists to analyze the complex dusty plasma exosphere of the moon and to pave the way for future exploration activities. To not be bound to only one location after landing, the small and versatile Mobile Payload Element was conceived in cooperation with the most prominent German experts in space robotics. With respect to sample analysis and in-situ resource utilization, the projects LUISE, L-DAP, L-GRASP and ProsPA were performed with OH participation. Today, the follow-on project LUISE 2 is still ongoing to prepare a European participation in future missions such as the Russian Luna 27.

OH System fully supports the vision to reach the far side of the moon in a globally cooperative space exploration mission. To prepare such a vision, OH has already developed several ideas, including landers, orbiters and systems with surface mobility. This paper gives an overview of the industrial developments and visions at OH for lunar exploration, and how they fit into the Global Exploration Roadmap.