

Construction of the Hunveyor-Husar space probe model system for planetary science education and analog studies and simulations in universities and colleges of Hungary.

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Several teachers and students had the possibility to visit International Space Camp, in the vicinity of the MSFC, NASA, in Huntsville, Alabama, USA, where they learned the success of simulators in space science education. To apply these results in universities and colleges in Hungary we began a unified complex modelling in planetary geology, robotics, electronics and complex environmental analysis by constructing an experimental space probe model system. First a university experimental lander HUNVEYOR (Hungarian UNiversity surVEYOR), then a rover named HUSAR (Hungarian University Surface Analyser Rover) has been built. For Hunveyor the idea and example was the historical Surveyor program of NASA in the 1960-ies, for the Husar the idea and example was the Pathfinder's rover Sojourner rover.

The first step was the construction of the lander, a year later the rover followed. The main goals are: 1) to build the lander structure and basic electronics from cheap everyday PC compatible elements, 2) to construct basic experiments and their instruments, 3) to use the system as a space activity simulator, 4) this simulator contains lander (with on board computer) for works on a test planetary surface, and a "terrestrial control" computer 5) to harmonize the assemblage of the electronic system and instruments in various levels of autonomy from the power and communication circuits, 6) to use the complex system in education for in situ understanding complex planetary environmental problems, 7) to build various planetary environments for application of the instrument assemblages in new testing conditions, 8) to use the model system with special internet connections capable of communicating in the web in field trip conditions for users, and 9) to use the model system in real planetary analog field trip simulations.

We began this work in 1997 at the Eötvös University, Budapest. Next the Pécs Univer-

sity joined, with new contributors in 2000 of Colleges from Szombathely, Székesfehérvár, Sopron and Pannonhalma. Recently 7 Hunveyor and Husar models are in construction in Hungary. Every group develop its new instrument-assemblages for various planetary conditions. The instrumentation which we shortly report are basic ones: a) minimal space probe energetics and electronic system, b) some basic instrumental assemblage (spectrometer, thermometer, Nürnberg-scissors type arm and the cameras), c) Husar units, c) testfields and testing experiments for soil strength analysis.

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