

Challenger Flies to the Moon

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Our group is currently designing cameras for four lunar missions. Two are commercial missions funded by venture capital, and two are being proposed to the NASA Discovery Program. In support of our camera design activities we are also initiating a comprehensive public outreach program; elements of these missions include orbiters, landers, sample return and penetrators. Camera systems incorporated into each of these elements will return various products to Earth to excite the public. Live videos from low lunar orbit, stereo surface images, descent images, sample collection and return capsule launch images, and surface panoramas are products being considered.

The outreach program makes use of our connection to a growing network of 43 Challenger Learning Centers, located in the US and internationally. These centers target elementary and junior high school students (5th - 8th grade, age 11-14). Every year approximately 10,000 students visit each one of these centers. The basic program consists of engaging students in a variety of lunar exploratory activities using recently acquired data from a lunar mission. In particular, we want to educate young students about the lunar environment and the search for water for a potential lunar base. The program could be augmented by data from an ESA mission, e.g. SMART-1. Challenger Learning Centers are already promoting lunar missions through their "Return to the Moon" program, a two-hour session, in which kids pilot the spacecraft, land on the Moon, collect samples, learn science and math appropriate to their scholastic level, plus communication and problem-solving skills. Building on the success of the Europa Orbiter mission educational program, we are designing an educational/outreach module that incorporates recent data from a lunar mission. A second outreach activity is based on creating a Web site, where the public will be able to interact with the actual spacecraft orbiting the Moon, watch live images, and, from the commercial missions, purchase images taken in real time. For a lander camera we will return unprecedented images of the spacecraft digging and storing samples on the lunar surface. In search of ice deposits, polar orbiters will map areas not covered by Clementine. We also plan to provide additional reference materials such as workbooks and static exhibits that would educate students about the interdependence of Earth and Moon, inspire students to plan expeditions to the Moon, returning astronauts to the lunar surface, and would involve them in the designing of a lunar base for advanced astronomy, scientific research, and a launch facility for future interplanetary missions. We plan to attain our public outreach goal - inspiring the public with the excitement of space exploration - by direct involvement of students with images recently returned from a lunar mission.