



| Peter Lawson from JPL at South Pole with LILA flag |

Launching Argonautica in the US:

Education and public outreach activities at JPL for ocean surface topography missions

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Activities being conducted in support of education and public outreach for NASA/CNES ocean surface topography missions focus on the development and distribution of bilingual educational products, and on promoting international collaboration between JPL, the Lycée International de Los Angeles (LILA), and CNES. As an integral part of this collaboration, we continue to coordinate participation in the CNES-sponsored Argonautica oceanography education program by working with LILA as the pilot school.

The Ocean Surface Topography Education and Public Outreach (OST-EPO) Team at NASA's Jet Propulsion Laboratory supports the Topex/Poseidon, Jason and Ocean Surface Topography Mission projects. Project Managers have encouraged the team to seek out and cultivate more projects and programs that can be done in collaboration with other outreach groups, particularly with our French counterparts at CNES, CLS and Aviso. In this spirit, the joint teams have released educational products that are available in both French and English.

Joint Product Development

Several products were written in French and later translated into English. For example, the French publishing house PEMF educational book, *Topex/Poseidon et Jason-1 Mesureurs des Océans*, was introduced in the US as *Topex/Poseidon and Jason-1: Surveyors of the Oceans*. The English version has been distributed widely in the US

The popular Jason board game, Voyage on the High Seas recently made its debut in French. The game was originally developed by the NASA/JPL Space Place team in conjunction with the JPL Education and Public Outreach team as a fun and engaging way to bring marine education to students aged 8 to 12. In the US the game has been

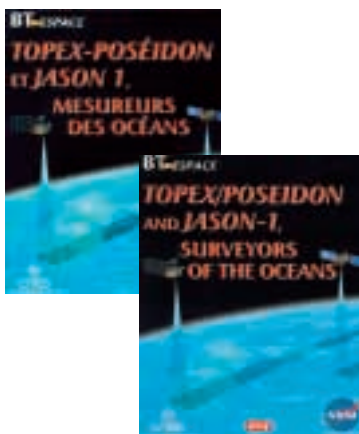
successful in both formal and informal education venues, and although the target audience is rather specific, the game has proven to be fun for the entire family.

Argonautica in the US

The BT book and the board game represent two of many JPL/CNES education products. Although there were joint products, a broad, collaborative educational program seemed elusive. Then we were introduced to a CNES-sponsored education program based on a theme of oceanography and the use of satellites. The theme provides the motivation for helping to improve our understanding of oceans and marine life.

Argonautica [Canceill et al., 2003], a mature and proven educational program developed by CNES, appeared to be a readily accessible and reasonable forum in which to launch US participation in a major joint initiative.

Argonautica brings oceanography directly into the classroom by creating an innovative working environment where students become researchers. In France, over 50 teachers and 12 companies support more than 1500 students in a number of projects and hands-on activities and experiments tailored to the age group of the students.



| Figure 1. Published in France, the BT children's book was translated into English and has been widely distributed in the US. |

We recognized that the Argonautica concept fit well into US science education standards, and that such a program could be appropriate for introduction into classrooms here. We were, however, faced with a major obstacle. When we visited the Argonautica website, we were quickly reminded that the entire site was in French, and there was not yet an English version. With a limited knowledge of the language, we realized we would need a different strategy to accomplish our goal. In spite of the language barrier, we remained committed to offering this excellent program to US schools. Ultimately we decided that a US school with students who were fluent in both French and English was needed.

**Lycée International de Los Angeles:
Almost a Next Door Neighbor**

A local school in Monrovia, California, met the requirements. The Lycée International de Los Angeles (LILA) is a French/American school with four campuses in Southern California (<http://www.lilaschool.com>). The Monrovia campus instructs students in grades K-5 (ages 5-10), and because of its

close proximity, is ideally suited to partnering with JPL and CNES. After the JPL team introduced the Argonautica program, the CNES Education Coordinator met with the JPL team and school director to give a detailed presentation. From this meeting an international collaboration was born.

**US Argonautica Participation
Launched through LILA**

The LILA Monrovia students will participate in Argonautica using data from the Argonautica website to track the migration patterns of marine animals. They will focus on animals in or near the Antarctic to complement another activity. Dr. Peter Lawson, a JPL scientist and LILA parent, spent two weeks in the Antarctic conducting research. While there, he kept daily journals and took photographs documenting his activities. The trip was posted to the LILA website (<http://monrovia.lilaschool.com/southpole.html>), and the LILA students and teachers communicated daily via email with him. The LILA group will participate in the 2004 Argonautica student conference in La Rochelle and will present the Antarctic adventure to fellow participants.

A second LILA campus has recently joined the Argonautica project. The Los Feliz campus in Los Angeles has enlisted ten students in grades 8-11 (ages 13-17), plus two 5th grade students from the Monrovia campus. This team will design and build a buoy to be launched and tracked in real time by the Argos satellite system. The students must work together to decide what additional parameters they want to measure and will construct and install on their buoy, sensors to obtain those measurements. LILA faculty and JPL engineers will advise the student team. The Education and Public Outreach team is coordinating the program for JPL.

**The JPL/LILA Earth Science
Collaboration**

While preparing the students for participation in Argonautica, JPL and LILA have also developed the JPL/LILA Earth Science Seminar Series. Through this collaboration, JPL Earth Scientists give monthly seminars on topics tied to the school curriculum and JPL research activities. In some cases, the seminars are conducted as visits to JPL. In a January 2004 visit, coordinators took advantage of the excitement surrounding the Mars' landings to stress the importance of Earth science to the study of other planets. The Ocean Surface Topography Outreach team coordinates the JPL portion of this collaboration for JPL's Earth Science Public Engagement Program.

The JPL Ocean Surface Topography Education and Public Outreach team continues to support joint outreach activities and the LILA in its important role as the pilot school for Argonautica in the US.



| Figure 2. LILA students, teachers, and parents with members of the JPL Earth Science Public Engagement team during a JPL visit as part of the Earth Science Seminar Series. |

| References |

Canceill, P., D. De Staerke, and D. Picamelot, 2003: Argonautica: 20,000 schools over the sea, Aviso Newsletter #9, 17-19.