NASA means Business - 2003, MIT Team   E-mail: marsgroup@mit.edu Phone: +1-617-225 9785
The Outreach Program

The preliminary report proposed an extensive and detailed outreach program. Some of the proposed initiatives were undertaken, others were not, and some new activities were added since the preliminary proposal was submitted. Time was the main factor in deciding which steps to implement and which ones to postpone. Indeed, the initiatives not pursued in the last few months were simply postponed and will be implemented by the MIT Mars Society, of which some us have been key members.

Our outreach activities were divided into three broad categories:

- Outreach based on different age groups
- Outreach for General Public
- Outreach through Media

Outreach based on different age groups

Under this category we basically considered students of various age groups, from primary schools to College.
As there are many primary schools and high schools in the Cambridge-Boston area, we took advantage of this fact and planned on participating in some Science Fairs. Our goal was to reach maximum number of students, from diverse localities and different age groups. By going to such fairs, we could reach not only the children (depending on the fair and the school), but also related adults, either parents or teachers. Apart from going to schools fairs, in Boston and at MIT, we conducted various outreach activities in public areas surrounding MIT; interviewing people, giving them information, etc., as is evident from our outreach video and one of our PSAs. We had taken extensive video footage from all our outreach activities and had compiled it into an outreach video, shown during the NMB conference.

The Brookline Science Festival

We attended the Brookline science festival on March 1, 2003, held at the Pierce School, Brookline. The festival was a brilliant confluence of primary and high school students from various schools in the Brookline area of Boston, MA. For this kind of audience, we refrained from disseminating complicated technical facts. Instead, we decided to show some videos and presentation slides. Not only were they quite interested in the Mars Exploration Rovers, which were naturally the special highlight of the material we had prepared, but they also asked many questions: technical or factual ones, general ones that concerned NASA’s plan for the
exploration of the solar system, and more. The youngest audience was literally glued to the videos, and asked for more. Seeing a Rover landing on Mars is certainly something they won’t forget, and evidently they will be more interested in the future in knowing what is going on with NASA and the Mars Exploration Programs.

Parents and teachers were also very eager to know more about the videos, and about the technical or scientific facts. We distributed some handouts, which were both intended to the parents and their children. These handouts consisted of several fun activities that could be done, in order to get an idea of the solar system, Mars and space; these included, for example, an “Interplanetary Travel Guide”, activities to understand the vastness of our solar system alone by placing balloons respecting the ratios of distance to the Sun, and so on.

The Cambridge Science Fair

The Cambridge Science Fair was held at the Cambridge Rindge and Latin Public High School, on March, 4 2003. In this fair we focused mainly on high school students, as did the fair itself. The material used was almost the same, except for the basic handouts that were replaced by others such as the “Martian Calendar”. We also focused more on the presentations we had prepared, than the video footage. We had some students that were already interested in NASA and space exploration, and we were happy to give them information about Mars and the Rovers which were scheduled to take off this summer. Others discovered the MER missions, through our presentations, and appreciated them at different levels, from cool to really interested. During this fair, as some serious teachers were present, we also had the chance to leave longer-lasting imprints in this school: the teachers were given the handouts, and our coordinates for future exchange of information / material were established.

The 2003 MIT/Cambridge Science Expo

We also participated in the 2003 MIT/Cambridge Science Expo, a Science Fair at MIT, on April 29, 2003, in which all of the surrounding schools were present. The students were there in order to present their science projects. This was a perfect scientific outreach ambience in the sense that
we could talk to students who had been working and experimenting on scientific problems. We let them express their opinion about what they did and how they liked it, and then we asked them questions about science and exploration in space, leading naturally either to let them talk about NASA and their personal understanding of its purpose, or to us explaining them what NASA’s mission was, and what it is about to do.

**College Students**

In order to reach to the last category of our “age groups” scheme, the University students, we naturally chose to operate at MIT. This obviously offers the advantages of working in a known environment, and with greater ease concerning both schedule and transportation. We interviewed MIT students, from disciplines as diverse as Linguistics and Philosophy to Engineering to Business Management, concerning NASA and the Mars Exploration programs, their feelings and expectations about the same, etc. This outreach activity was addressed to an already aware public, and so it was more intended to make them think about NASA’s goals and mission, and to get their feelings about it.

**Outreach for General Public**

Several events were organized, and we also developed “tools” to make as extensive a public outreach possible.

**JPL Video Conference**

In order to provide the information to the public, Simply Mars took part in the setting up of a video conference, with Dr. Joy Crisp, MER project scientist, JPL. The conference took place on February 28, 2003, and was a great success. It was very instrumental in conveying valuable first hand information about MER missions from an expert scientist. The focus of her talk was mainly on landing sites for the missions to be conducted in summer 2003.
In order to be able to gather a community interested in NASA’s activities and Mars news, and in order to augment our own outreach efforts, we decided to build a website. We used this website as a means to keep our outreach activities posted and continuously updated. The website contained a resource section, where one can find useful links, a multimedia section, etc. We also created a web forum where members can post message and interact with one another. The Simply Mars team will act in this forum as the moderators, bring new subjects into discussion, provide internet links, and answer the questions of the public.

Public Mailing Lists:

In order to keep in constant touch with the local communities we started two mailing lists on the MIT web domain: simplymars@mit.edu and marsgroup@mit.edu. From our participation in all the outreach activities, we gathered a significant database with e-mails of numerous people we met, and entered into the Simply Mars mailing-lists. This is our means of keeping people who expressed a special interest in our activities updated about our team, and about news concerning NASA and Mars.

Outreach through Media

The Simplymars team was the subject of several news articles, in particular in the AIAA (American Institute of Aeronautics and Astronautics) and the MIT Graduate Student Council’s Newsletters. This provided us with extended outreach far beyond where we could be physically present.
Simplymars at the Brookline Science Festival

Simplymars, the MIT finalist team for the NASA means Business competition -2003, was a major Mars outreach attraction at the Brookline Science Festival 2003, at Pierce School, Brookline, on March First. The team exhibited videos, presentations and posters on past present and future Mars explorations. The presentations were greatly effective in communicating the imaginative thrill accompanying the very prospect of mars exploration. Especially impressed were large numbers of children who were the target audience for the presentations. The simplymars group showed animations of the rover mission to mars, the launch, cruise, the entry into Martian atmosphere and subsequent landing, apart from presentations on the Pathfinder rover and the salient features of the rovers being sent to mars in the next few months. Among other things, the MIT team took great pleasure in answering to the instant questions of the audience, children and elders alike. Informational handouts and exercises specially chosen for different age groups were also distributed at the simplymars desk which provided great excitement to students and educators. Not surprisingly, the team drew a significant membership from residents of the Brookline area, who expressed willingness to receive more outreach information and educational material. The team was represented by team leader Madhuradhan Nikola, Mars information specialist Erwan Mazanico, outreach co-ordinator Marcus Daldoen and video expert Zach Weston.

In December 2002, the team was selected as one of the finalists of the NASA means Business (NMB) Student Competition 2003. NASA holds the competition every year to encourage students from national universities to develop actual business, outreach and customer engagement plans for future NASA missions. This year, the theme of the competition is to develop public service announcements and outreach strategies for NASA’s Mars exploration programs. More information can be obtained from mrmadhan@mit.edu. The team will be presenting its work at NASA’s fifth customer engagement conference to be held at the Johnson Space Center in Houston in May 2003.
NASA MEANS BUSINESS STUDENT
COMPETITION 2003 Simply Mars

The Simply Mars Team

The NASA Means Business (NMB) Student Competition 2003 offers to students the chance to help NASA tell its story to everyday people in new and more effective ways by applying their knowledge of the business world and its tools of advertising, marketing, communication and journalism. The NMB Teams are to develop television Public Service Announcements about NASA's Mars Exploration Program and its planned missions to that planet, as well as an outreach program. Then, in May 2003, representatives of the Finalist Teams will attend the Fifth Annual NASA Customer Engagement Conference at the Johnson Space Center in Houston, TX. NASA plans to incorporate innovations from the students' work into its emerging Customer Engagement mission architecture and evaluate them against other leading concepts being developed for NASA-TV and elsewhere.

The MIT Team was formed in November 2002 and, after submitting its proposal (Simply Mars), was selected as a finalist. The team gathers students from different departments, both graduate and undergraduate. In addition to its innovative storyboards for the two Public Service Announcements, the team proposed numerous outreach activities that will articulate to the general public the value and anticipated contributions of the space missions that NASA launched or plans to launch to Mars. The proposed activities include developing a Mars Package, an educational package containing information about Mars, projects related to Mars, etc.; organizing a Mars Rover competition for college and high-school students; collaborating with the Boston Museum of Science to dedicate an exhibition space to the Mars program; and reaching out to the media and the entertainment industry. The supporters of Simply Mars include MIT, the Massachusetts Space Grant, AIAA, and NASA.

For more information about our team and our proposal, please send us an email at simplymars@mit.edu.
**Future Work**

All the above activities were pursued in a matter of just four months. Thus activities were not part of the main proposal we had submitted during Fall 2002. However, when we began our outreach, our plans evolved into these directions. On executing the same, these directions proved to be very instrumental in realizing our goals of extensive outreach. This also means that we had to leave behind some of our previously planned activities. Time was the main factor in deciding which steps to implement and which ones to postpone. Indeed, the initiatives not pursued in the last few months were simply postponed and now will be implemented by the MIT Mars Society, of which some us are members.

Some of our previously planned activities which we would now consider to implement are:

**Mars Package:** We had previously started developing an educational package containing knowledge about Mars that can easily be distributed. The Mar Package was designed for educators or organizers to prepare interesting presentations on Mars and fun hands-on projects. The Mars Package’s audience was divided into three main groups: 1) preliminary school students, 2) high school students, and 3) college students. The content of the Mars Package depends on the age group. But, in general it was to be a compilation of i) lecture notes, ii) projector slides, iii) CDs, iv) models, v) booklets and projects, all relating to a specific topic of Mars.

Although the development of the package was initiated, it is still not complete at this point. Further work is needed before we start sending the package to educators.

**Mars Rover competition:** We proposed in our preliminary report to have college students get involved in a Mars rover competition. We were thinking of using as a basis for our competition the Mobile Autonomous System laboratory (MASlab) program given at MIT and which takes place every January. The goal was to allow students to learn about and enjoy the difficulties underlying designs of exploration rovers and come up with innovative solutions. The
competition was also to be opened to colleges from around Boston. This activity was not included in our final outreach program because of time constraints.

*Boston Museum of Science:* The Boston Museum of Science already has exhibits related to space exploration, but it needs a space dedicated to Mars program. There could be some models of past or current rovers that would show the design trades and the trends that engineers followed. The goal was to have people from any age learn about the Martian environment, the discoveries, and the technologies NASA is sending there to unravel mysteries. We initiated negotiations with the Museum of Science, but we haven’t reached our collaboration objectives yet.