



22 January 2002

Dear Sir or Madam:

You have been invited to join the development team for NASA's newest initiative: an improved *Autonomous Martian Investigative Explorer* (A.I.M.E.). With your help, we hope to design and build a solar-powered, self-navigating intelligent robot that can assist a crew of human astronauts as they explore the surface of Mars. The robot will need to perform such tasks including, but not limited to, successfully traversing the Martian terrain, collecting and sorting samples, and self-maintenance.

As a member of project AIME, you will be assigned to one of four teams, each of which will focus on designing and implementing a robot capable of accomplishing one or more of the Explorer's proposed functions. The task forces are as follows:

- ❖ Search for rock, soil, and ice samples. Bring back two of each to base camp and store before power supply is exhausted. Power supply lasts for three (3) hours.
- ❖ Explore a region of the Martian surface for twelve (12) hours, taking temperature readings at ten (10) predetermined locations. Keep in mind that your power supply only lasts for three (3) hours. Recharge in full sun as needed; the charging process takes a half-hour.
- ❖ Navigate from the field site to the base camp through the Martian canals before power supply is exhausted. Power supply lasts for three (3) hours.
- ❖ Avoid obstacles while exploring the Martian surface. In particular, look out for cliffs, big rocks, ice, and roving Martians. Respond appropriately to each obstacle – we do not wish to create an interstellar incident!
- ❖ Sort several rock, soil, and ice samples collected by the field crew into the appropriate containers before the power supply is exhausted. The supply lasts for three (3) hours.

Task force assignments will be made at the first project meeting. Additional information concerning specific tasks will be provided after teams are assembled.

We look forward to working with you, and good luck. Sincerely,

Woodie Bennet
Emily G. Allen
Project Chairs