

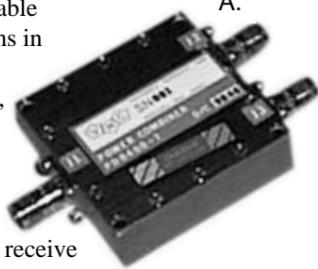
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# Helmet Camera

successfully completing the project.

LMSO was the local prime contractor for the job as part of the firm's Science, Engineering, Analysis and Test Operation contract with NASA. LMSO designed and built the helmet shell that is attached to the EVA astronaut's helmet and integrated the system's three camera lenses and a common camera electronics box into it. LMSO's two major subcontractors were Litton, which provided the UHF antenna, and Broadcast Sports Technology, which provided all of the video components—cameras, transceivers, and S-Band receiving antennas.

Boeing Reusable Space Systems in Huntington Beach, Calif., outfitted the shuttle with all necessary antennas and equipment to receive video and control the cameras from inside the shuttle. The firm provided all of the cabling in the orbiters to connect the antennas to the transceiver



and installed brackets in the orbiters to hold the antennas onto the sill and to put the transceivers under the payload bay liner.

"Wireless Video is a 'wireless' system between the astronaut and the supporting hardware located on the orbiter," said Dorothy Grosskortenhous, Boeing WVS project engineer. "For the system to

work, it actually required the installation of well over 850 feet of wire and coax cabling. This—along with finding room on the already crowded sill for seven antennas—proved to be a challenge. There were many hurdles to overcome in the design and installation process, which could not have been accomplished without a coordinated team effort."

All required equipment has been installed in *Atlantis* and *Endeavour*. It is being installed in *Columbia* during its current major modification downtime in Palmdale, Calif. It will be installed in *Discovery* when it undergoes major modifications later this year.

The new system is the result of great teamwork and a lot of hard work.

"We had a lot of good people working on this project, and we all pulled hard in the same direction to get it done," said Piatek. ■



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The Wireless Video System team includes, from left, front (kneeling): Thomas Nguyen, Joe Perez; middle: Irene Piatek, Claire Lepper, Wayne Wondra, Jacque Myrann, Hiep Nguyen; back: Paul Wheat, Larry Johnson, Belinda Butler, Matt Johnson, Bill Bowers, Siraj Jalali.

- A. The UHF power combiner allows only one transceiver to transmit commands.
- B. One of two S-Band antennas on the helmet.
- C. One of two transceivers under the payload bay liner.
- D. The UHF command antenna installed in *Endeavour*.



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— Irene Piatek, NASA WVS project manager

# Spirit of the tropics permeates JSC

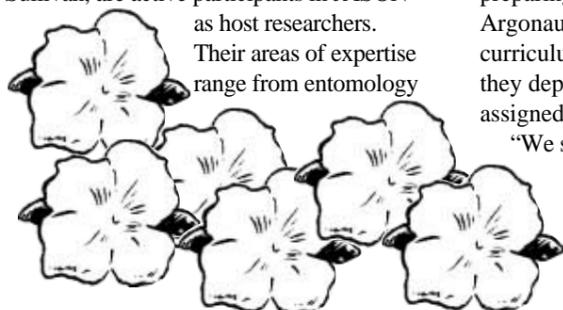
It's a far cry from last year's deep sea and deep space exploration, but this year students are having just as much fun, excitement and education as ever during the annual JASON Project expedition.

You may recall last spring JSC's campus was sprinkled with broadcast trucks and students—all eagerly sharing the sights and sounds of NASA with students around the world. This year, bus loads of students are again filling Teague Auditorium but this time to see oozing volcanoes and the lush tropical landscapes of Hawaii.

As part of JASON XII, a team of more than 28 students and teachers has once again joined up with famed Dr. Robert Ballard, the scientist who discovered the Titanic and founder of the JASON Project, to partake in a tropical expedition. The selected "Argonauts" have been studying for the last six months to prepare for the awesome adventure and now are sharing their journey with students around the country.

Dubbed "Hawaii - A Living Laboratory," JASON XII concentrates on the biological, ecological, aquatic and geological attributes of Hawaii. Twelve scientific experts, including former astronaut Kathy Sullivan, are active participants in JASON as host researchers.

Their areas of expertise range from entomology



to ichthyology (the study of fish). There are specialists in volcanoes, astronomy and conservation. Some study the weather, others, the water, yet all share their passion and knowledge with the Argonauts and audiences throughout the two-week JASON Expedition.

For the fourth year in a row, JSC has a sponsored student argonaut participating in the JASON Expedition.

Maren Ygnve, a ninth grade student at Ball High School in Galveston, was a member of the first group of Argonauts to arrive in Hawaii. Growing up sailing, snorkeling and swimming, Ygnve had an early desire to become a marine biologist and was eager for the chance to become an Argonaut.

Ygnve had participated in past JASONS when her schools visited JSC. Last year, she decided to apply to become an Argonaut.

"I thought it would be really neat to be an Argonaut," said Ygnve who thought she hadn't been selected when she received the confirmation letter in the mail. "It was a thin envelope, that I was sure meant it was bad news."

Her initial instinct was wrong in this case, and Ygnve spent the next six months preparing for the Hawaiian adventure. The Argonauts have a fairly comprehensive curriculum they have to complete before they depart on their journey, including assigned reading and experiments.

"We spend a lot of time reading and participating in online chats to get to know the other Argonauts," said Ygnve, who read five books as part of the background reading.

Ygnve already had some related

experience in her background, such as attendance at Tyler Zoology Camp, Texas A&M Sea Camp and serving as a teen volunteer at the Moody Gardens Aquarium in Galveston. She also completed several hands-on experiments as part of the Argonauts specialized training.

All of her preparation has paid off, and now Ygnve is standing atop volcanoes while talking to other students around the world.

"She sounds a little tired but sounds like she is having the time of her life!" said Dena Ygnve, Maren's mother who has been watching her daughter's adventure 'live' from the Teague Auditorium most of the week. "I talked to her last night and it was great. Sounded like she was calling from next door versus the middle of the Pacific Ocean."

As we talk, Maren's image flashes across the broadcast screen where she is standing on an inactive lava flow, now hardened, at 4,000-foot elevation.

"I think this experience is absolutely fantastic," continued Ygnve. "I had no idea it was so well organized and so comprehensive and would expose the students to so many things. I am very happy for her to have this opportunity."

Ygnve was also impressed with the extent of cultural exposure the Argonauts receive as part of their expedition. The Argonauts were treated to a luau and even journeyed in an outrigger canoe.

In addition to the Argonauts personally participating in JASON, many thousands of



students watched the activities 'live' from Primary Interactive Network sites around the world.

JSC's Teague Auditorium was transformed into a tropical paradise, complete with an 'erupting' volcano for schoolchildren from around the Houston area. On three large screens, guests could see each of the three Argonauts and researcher groups traipsing through Hawaiian brush, tracking active volcano flows or studying the island geology.

"Each JASON Expedition gets more and more exciting," said Debby Herrin, JSC JASON Project PIN site coordinator. "The sights and sounds we're broadcasting from Hawaii are captivating. The students here can't help but be mesmerized by what they're seeing and we're having just as much fun as they are, and learning at the same time. It's something every schoolchild should participate in." ■

For more information call 1-888-JASON-00 (1-888-527-6600) or visit [www.jason.org](http://www.jason.org).