



the daily Collegian

30°

www.collegian.psu.edu

Vol. 99, No. 77 18 Pages ©1998 Collegian Inc.

Thursday, Oct. 29, 1998

Published independently by students at Penn State

NASA nervous as Glenn's historical launch nears

By MARCIA DUNN
AP Aerospace Writer

CAPE CANAVERAL, Fla. — The stakes are higher than ever for NASA as it counts down the final hours to John Glenn's heralded return to orbit today, and the man in charge of spaceflight knows it.

"As a person responsible for this mission, I feel an awesome responsibility and apprehension that everything goes well. This is special," Joe Rothenberg said after having lunch with the 77-year-old Glenn yesterday.

As always, Rothenberg said, NASA has done everything possible to ensure the safety of space shuttle Discovery and its seven-member crew. But the fact that one of them is Glenn, the first American to orbit the Earth and a senator for the past 24 years, has upped the ante if anything goes wrong.

"Would it be any different from any mission? Sure," Rothenberg said. "Because like having a teacher on board, it really has got

very high visibility and an awful lot of people would look at it as something happening to an American hero and we were part of the process. There's no question about that."

Glenn was so beloved by America after his 1962 flight, in fact, that President Kennedy reportedly instructed NASA not to fly him again — he didn't want to risk the astronaut's life. Glenn never got to ask Kennedy if this was true; the president was dead by the time Glenn heard about it.

Schoolchildren around the country will be watching Glenn's return to space, just as youngsters watched on Jan. 28, 1986, when schoolteacher Christa McAuliffe soared aboard Challenger. She and the six others on board were killed when the shuttle blew up 73 seconds into flight.

Up to a quarter-million people are expected to converge on the area for a glimpse of the launch. That doesn't count the 3,800 reporters expected for liftoff, or

the 70 members of Congress, or President Clinton and his entourage.

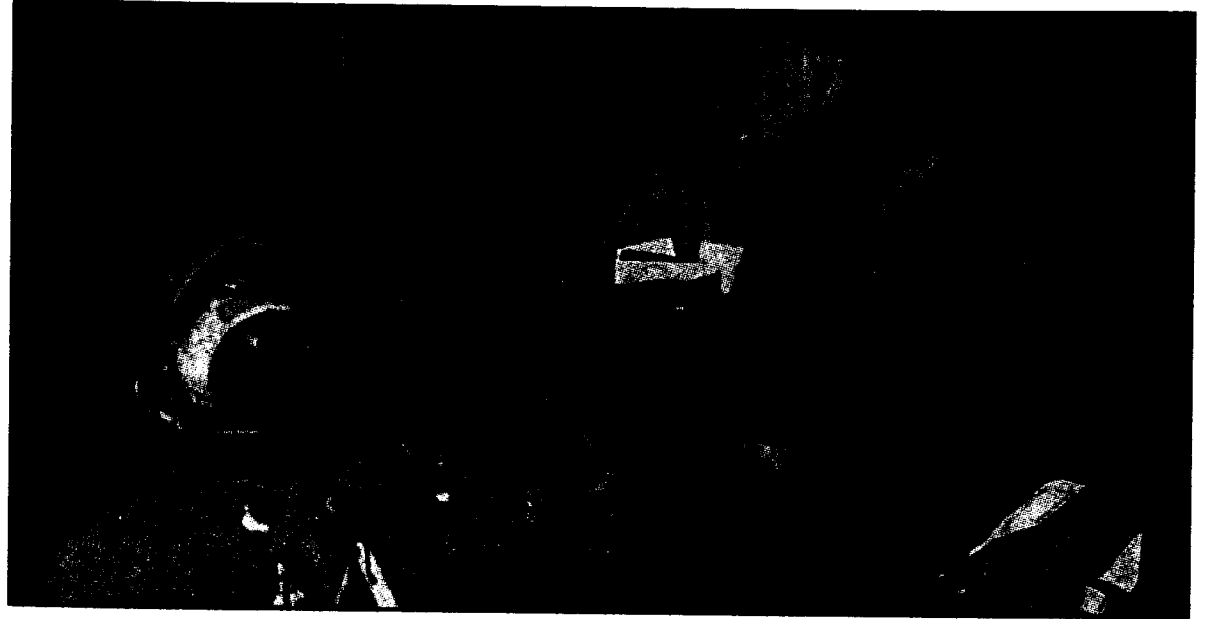
Everything seemed to be in NASA's favor heading into the final hours — the countdown was humming along and perfect launch weather was forecast.

"It looks like Mother Nature wants John Glenn to return to space as much as the rest of us," said Air Force Capt. Clif Stargardt, a meteorologist.

Glenn spent yesterday, his last day on Earth for the next 1½ weeks, reviewing flight plans and greeting well-wishers from afar.

The seven astronauts stood near their launch pad, waving and shouting to relatives and friends kept 20 feet away to prevent the crew from catching a cold.

"A little different trip this time," Glenn called out in response to a question. Then: "Oh, don't worry, I'll get some window time." On his five-hour Mercury flight, Glenn had almost no time for sightseeing. Please see **GLENN**, Page 2.



AP Photo/George Shelton

STS-95 pilot Steve Lindsey, right, reaches out to help Sen. John Glenn, D-Ohio with his launch and entry suit Tuesday at Kennedy Space Center's Operations and Checkout Building. The seven members of the shuttle were preparing for today's planned liftoff on the shuttle Discovery.

Seeds, sleep experiments take off with shuttle today

By JENNIFER NEJMAN
Collegian Staff Writer

Pieces of Penn State research will be launched into space today if the shuttle Discovery lifts off as planned from Cape Canaveral.

In addition to research on aging, the deployment of a satellite to study the solar corona, the outer part of the sun's atmosphere and other scientific projects, astronauts aboard Discovery will conduct experiments connected to Penn State. Two experiments on the mission involve the research of Penn State professors, one the continuation of a sleep study, and the other a study of the effects of gravity on plant growth.

Seeds in space

About 100 cucumber seedlings will make the journey and return frozen to Penn State biology professor Daniel Cosgrove and Bruce Link (graduate-biology).

"We're sending up some seedlings and we're analyzing the effects of microgravity on certain genes involved in gravity-dependent developmental processes in plants," Cosgrove said.

Cucumber seeds were chosen because of their biological characteristics. As a seed germinates, it is covered in a seed coat. An outgrowth of the stem called the "peg" catches the seed coat and holds the plant down, he said. Cucumbers have a gravity-dependent outgrowth of the peg tissue, he said, which makes them an ideal candidate for the gene study.

"Gravity influences the development of plants in several ways," Cosgrove said, explaining it directs plants on earth to grow up through hormonal distributions. "They have almost no gravity when they are up there orbiting. So they don't have that growth vector to guide their growth patterns."

On the whole, plants grow fairly well in space, he said, explaining they carry out necessary processes with slight alterations.

Some day, plants may be needed for missions to Mars to supply food and recycle gases for extended space existence, Cosgrove said.

Sleeping on the job

In addition to the seedlings, another experiment aboard Discovery will focus on sleep and the hormone melatonin.

Penn State professor James Pawelczyk, who worked aboard the space shuttle Columbia's STS-90 Neurolab mission for 16 days last spring, participated in four nights of sleep experiments.

During the study, he wore a sleep net over the head and body suit that measures respiration, Pawelczyk said. He also swallowed a pill sensitive to temperature and wore a tube tapped under his nose.

"Try going to sleep with masking tape under your nose," he said.

Sleep in space is in many ways similar to sleep on earth, he said. Astronauts, like people who work in professions which require long hours and unusual schedules, can become drained due to lack of sleep.

"Having a well-rested person is important for having safe conduct," he said, explaining that accidents are more likely to occur when individuals are tired.

About 60 percent of astronauts, Pawelczyk said, experience some form of sleep deprivation. Astronauts on his mission were forced to work strange hours on little sleep.

It is possible melatonin could facilitate the development of a sleep rhythm in the course of the day through blood pressure. Please see **SHUTTLE**, Page 2.



Collegian Photo/Shawn Knapp

Rich Schaller (senior-electrical engineering) wires a circuit board into an experimental module for NASA's Get Away Special program in EE East. The program's participants hope their experiments will be part of a space shuttle mission sometime this spring.

Get Away Special program puts experiments in space

Penn State students are getting the chance to put payloads on the shuttle, testing experiments begun here on Earth.

By ALISON BALMAT
Collegian Staff Writer

As John Glenn prepares to blast off on the shuttle Discovery today, a team of Penn State students will be finalizing details on experiments that will rocket into space in the near future.

Working in cooperation with the NASA Get Away Special program, 45 graduate and undergraduate students have assembled three payloads, or canisters, with experiments to be tested in space this spring.

"This is a great opportunity," said Jason Soloff (senior-electrical engineering), assistant payload manager of Penn State's Get Away Special program. "It gives you some real-world experience with cutting-edge stuff."

The first experiment will grow plants in space, testing their ability to develop and germinate normally. Edie Sears (graduate-agricultural and biological engineering) is the payload manager of Penn State's Get Away Special program

and the head of the germination project. She hopes the experiment will bring new insight into the biology-space relationship.

"If we're ever going to colonize the moon or planet, we can't do it without plants," she said.

When the shuttle hits 50,000 feet above the atmosphere, a second experiment aboard will be activated to map the earth's magnetosphere. A third trial will measure the impact and force of orbital debris, such as meteors.

Penn State has sent experiments into space on two prior occasions, yet glitches caused both missions to fail. After working on this project for two years, these students are ready to see their work pay off.

"We're building on a lot of mistakes. Hopefully by the time ours is up there, it will be a success," Rich Schaller (senior-electrical engineering) said.

In 1982, the program began as a way to utilize extra cargo space in shuttles while creating opportunities for experimentation in space.

To date, 152 Get Away Special payloads have flown, with about one-half of those payloads coming from universities, said Dave Wilcox, NASA Get Away Special mission manager. More than 400 organizations are on the waiting list to fly their payloads in space. Wilcox said flight opportunities

"We're building on a lot of mistakes. Hopefully by the time ours is up there, it will be a success."

— Rich Schaller
senior-electrical engineering

are the breeding ground for bigger and better things for experiments and experimenters.

"(NASA) wants to give more flight opportunities to the educational community," he said.

To encourage university participation, NASA charges them just \$10,000 per canister, whereas private industries must pay \$27,000. Lockheed Martin helps fund a large portion of the fee for Penn State.

"I think (the program) offers a very low-cost, hands-on opportunity for students to participate in the space program," Wilcox said.

Keith Soldavin (senior-electrical engineering), debris experiment team leader, has been wanting to do research like this his whole life.

"We get to hob-knob with NASA engineers and get to build something practical instead of just theory in classes," he said.

Men Stopping Rape reorganizing

The group hopes to reband and begin work on educating students on rape issues soon.

By PATRICK GRIFFIN
Collegian Staff Writer

Because men commit the majority of rapes, they have the power to stop them, according to a mission statement of Men Stopping Rape.

Men Stopping Rape, a group that disbanded due to a loss of members two years ago, is reorganizing and hopes to begin work educating students about issues regarding rape.

The group will hold an organizational meeting at 7 p.m. today in 120 Boucette.

Topics of discussion will include the reactivation of the group and the role of men and society in date and acquaintance rape.

Doug Fisk (senior-music) hopes to talk about the recent alleged rapes in the State College area at today's meeting. The meeting is not only for men; women also can attend.

"It is necessary to stand up and oppose the injustice of these incidences," Fisk said.

Fisk emphasized unity is important for the group in order to discuss the issues effectively.

"It is important for this group to exist in the community as (a) voice," he added. "It is my hope that this group can engage others in dialogue so that we might learn to better live with our fellow human beings."

Penn State's large size may affect the organization, said Tim Rementer (sophomore-kinesiology), but added "any program that deals with rape in this way will always have a positive influence on students."

Linda LaSalle, assistant director for the Center for Women's Studies, said the group performed on-campus workshops and programs about sexual assaults when it was active.

In order to become recognized as a student group again, they must reactivate their constitution with the Undergraduate Student Government, she said.

LaSalle added men who live in a college setting should discuss the problems of rape and sexual assault with other men, making this group an essential part of the university.