

Pictures may be seen at planetarium

# Voyager 2 to pass by, photograph Saturn this week

From Staff and Wire Reports

The eerie and often amazingly beautiful sights of the ringed planet Saturn will again reveal themselves to the world this week as the Voyager space probe flies by the planet sending pictures back to earth, including those to be received by the Morehead Planetarium on campus.

As the spaceship cruises past the solar system's second largest planet this week, the planetarium will offer students and area residents a series of its live transmissions, planetarium Director Tony Jenzano said.

The probe, now nearly a billion miles from earth, has been sending back pictures of the planet, its massive ring structure and its many moons for several days. But the transmissions relayed this week will give the closest view of the secrets of Saturn, Jenzano said.

Jenzano said Tuesday's program, which starts at 8 p.m., would be a special program because the craft will be passing through the planet's E-ring at its closest point to the planet. When Voyager 2 passes through the E-ring, it will be at a crucial stage in its mission because it may encounter chunks of matter and become damaged, Jenzano said.

Monitors on earth would not know of the probe's condition until midnight Tuesday, when a two-and-a-half hour blackout is lifted on transmissions from Voyager 2.

The programs, replacing the planetarium's regularly scheduled shows, will run today through Friday and will be free to the public. They will begin at 8 p.m. every night and last approximately one hour, except during Tuesday's special transmission, which will precede the craft's entering the blackout period.

Jenzano stressed that there would be no comparable event until 1986, when Voyager 2 reaches Uranus, the next planet out from Saturn in the solar system.

The planetarium also had the live broadcasts for the flyby of Voyager 1, and more than 2,500 people saw those pictures as they were relayed from deep space. This time, however, fewer spectators are expected to attend the transmissions since they also will be carried on cable television, Jenzano said.

The transmissions from Voyager 2, relayed from space to special networks in California, are seen at the planetarium at the same time they are seen by scientists and researchers around the country, some of whom will provide commentary.

Meanwhile, researchers were busy this weekend collecting photographs and transmissions from Voyager 2 and making new discoveries about the ringed planet.

For instance, a close-up look by Voyager 2 at Saturn's strange two-toned moon gave no obvious explanation of why half its surface is some of the darkest material in the solar system and the rest is a shiny sheet of cratered ice, scientists said Sunday.

The initial examinations of photos taken as Voyager passed within 560,000 miles of the moon Iapetus late Saturday did not solve the riddle, although much more extensive study should at least give solid hints, said Bradford A. Smith, photography team leader.

"It's not something that's coming right out and staring us in the face," he said at a news conference. The ship, closing within 1.5 million miles of Saturn's swirling cloudtops Sunday, also aimed its cameras and instruments at the moons Dione, Titan, Rhea, Hyperion and Mimas. It examined the complex structure of the planet's fabled rings and watched the ribbons, pinwheels, belts and spots churning about the gold-orange clouds.

The ship was on target and in good shape as it approached Tuesday night's rendezvous with the giant, gaseous planet.

Smith said Iapetus seems to be covered with a skin of ice over a rocky interior. So "probably the bright material is what should be there and the dark material is coming from somewhere else," he said.

The key question is whether the dark covering oozed out from inside the moon or came from outside the moon and was splattered across its forward face, he said.

Smith said the dark area "appears to be quite a bit darker than asphalt ... and is twice as dark as the very darkest region of Earth's moon — but that doesn't tell us where it came from."

He said some types of asteroids are about as dark. Voyager also is examining selected areas with the rings, a startlingly complex collection of particles that range in size from dust to boulders, to search for moonlets embedded in the rings. Any such moons, which might be anywhere from half a mile to 20 miles across, might explain why the rings are separated into hundreds of ringlets.

Chief Voyager scientist Edward Stone said, "a little moonlet buried in the rings ... will form a gap" by sweeping particles out of its orbit.

Voyager is concentrating its search on a specific gap several hundred miles wide, where — if the moonlet theory is correct — an icy boulder 12 to 18 miles across should be located, Stone said.

Smith said the search is about one-third complete and that "we have yet to detect one of these embedded satellites."

The comprehensive search will continue as Voyager races toward its rendezvous with the planet, collecting photos of eight other moons along the way as it leaves Saturn behind.

Tugged by the planet's gravitational pull, Voyager's speed climbed to 27,000 mph Sunday. It will be sailing along at more than 54,000 mph by the time it passes Saturn and curves off for a pass by distant Uranus in January 1986.

The one-ton spaceship was on target and healthy, said mission director Richard Laefer, and "operations for the last 24 hours have been routine."

Smith displayed photos — their colors falsified by juggling wave lengths to increase detail — that showed "increasing evidence for vorticity in Saturn's atmosphere."

An oval clump of clouds seemed to be rotating clockwise where it is trapped between two jet streams that race in opposite directions across the planet's face.

The feature, which appears bluish against a field of brown clouds, may be similar to a gigantic hurricane on Earth.

Voyager 2's views of the huge, distant planet are much more detailed than pictures taken last November when a sister ship, Voyager 1, toured the system.

Voyager 2, its flight plan altered to examine many of the mysteries found last year and to look in places Voyager 1 could not see, is also examining more closely many of Saturn's 17 known moons.

Tuesday's visit to Saturn also will feature close encounters with nine of its major moons. Laurence Soderblom, deputy photography leader and moon specialist, said the high point should be a flyby of the smooth globe of Enceladus at 8:45 p.m. PDT, 21 minutes after the ship buzzes Saturn from 63,000 miles.

Since Voyager 2 is nearly a billion miles from Earth, radioed news of its encounter won't reach the Jet Propulsion Laboratory here for one hour, 26 minutes.

"As far as the possibility of finding something that's really wild and new, it has got to be Enceladus," Soderblom said in an interview. "Enceladus is going to be very exciting."

The moon, he said, is extremely bright, suggesting it may be covered with frozen material freshly painted on its surface. Unlike most other large Saturnian moons, Enceladus shows few of the craters caused by bombardment by space debris.

Soderblom said the complex gravitational interactions with another moon and Saturn could be heating the inside of watery Enceladus with tidal currents, leaving only a thin, frozen crust intact.

The tugging tides could be "flexing and cracking open the surface so gases can escape" like champagne when a cork is popped. The fog of gas and water might not only repeatedly cover the surface but even provide material that forms the broad, thin E-ring — outermost of Saturn's seven major rings.

"In general, we suspect very strongly it's an active object, but we'll just have to wait and see," Soderblom said.

The hectic close encounter with Saturn will keep scientists happily overwhelmed as the ship skims past six major moons, studies seven smaller ones, closely examines the inexplicably complex structure of the rings and searches the region for the unexpected.

Results of the trip will be trickling out for weeks as scientists sort through some 18,500 pictures.

While approaching Saturn, two Voyager cameras will look from different angles to obtain a stereo image of a strange, thin ring that seems to be twisted into braids. Beginning at 4:42 p.m. Tuesday, Voyager will count the hundreds of ringlets inside the major rings by watching the light from a star blink on and off as the spacecraft passes behind the rings.

The ship also will zip past the moon Hyperion late Monday, then catch giant, haze-obscured Titan from 413,000 miles at 2:38 a.m. Tuesday.

## Legislators find bad, good in new districts

By DEAN LOWMAN  
DTH Staff Writer

Area legislators say they have mixed emotions about the N.C. General Assembly's Congressional redistricting plan.

The plan, approved by the legislators in early July, moves Orange County from the 2nd to the 4th Congressional district, linking it with Durham and Wake Counties.

"The plan has definitely got some problems, because it links a small county (Orange) with two giants," said Rep. Trish Hunt, D-Orange.

Sen. Charles Vickery, D-Orange, said a second problem with the plan was that "with the area seeing such a tremendous population growth in recent years, it is likely that the district will have to be changed again after the 1990 census."

But both legislators said they felt the Triangle district may benefit from the change.

"This will make the area a clear, identifiable unit as each county has similar goals," Vickery said. "The legislator from this district will place a tremendous emphasis on education, medical care and the growth of industry in the Research Triangle Park area," he said.

Hunt said the move should prove worthwhile for the citizens of Orange County because they "have a lot in common with

people in the other counties and can work toward the same goals."

Vickery, however, cautioned that his predictions were dependent upon the quality of the congressman elected from the district.

"If you have a good congressman who works for the people, I think you will see that the Triangle area will experience a lot of progress over the next decade."

"But if the Triangle's representative doesn't do a good job, I think we will look back on this decade with regret," Vickery said.

Other counties affected by the redistricting plan are Jones County, shifted from the 1st District to the 3rd; Alamance, 6th to 2nd; Chatham, 4th to 2nd; Randolph, 4th to 6th; and Hoke County, 7th to 8th.

In addition, Alexander County was shifted from the 10th District to the 5th; Davidson, 5th to 6th; Rockingham, 6th to 5th.

Possibly the most controversial move came in Moore County, which is now in two districts. The northern half of the county was placed in the 6th District, while the southern half remained in the 8th District.

After threatening a court fight to keep the entire county in one district, Moore County Democrats backed down and accepted the change.

## New DOT secretary gets high marks from staff

By SCOTT PHILLIPS  
DTH Staff Writer

After just one month in office, William R. Robertson, the state's new secretary of transportation, has received favorable ratings from department personnel and has begun to implement new programs.

Robertson's predecessor, Thomas Bradshaw, resigned his position to pursue other interests, department spokeswoman Doris Gupton said recently.

Gupton said that Robertson had made a favorable impression on DOT employees. "Anyone who has had dealings with him seems to like him a great deal," she said. "(Gov. Jim) Hunt got the right man."

In announcing Robertson's appointment July 9, Hunt said, "Of all the candidates I looked at, Bill Robertson is the person who best fits the qualification I outlined." The new secretary was sworn into office July 25.

Robertson's major qualifications for the position seem to be his success in building and managing his businesses and his legislative experience, Gupton said.

Robertson, a 63-year-old businessman from Washington, N.C., owns three broad-

cast facilities and several soft-drink bottling firms. He also served in the state House of Representatives from 1967 to 1969 and from 1971 to 1973. But, he has had no previous experience in the department.

Hunt praised Robertson as a "hard-nosed, experienced and capable businessman who will know how to manage the employees of the department, to fully utilize the equipment owned by the department and to obtain the maximum benefit from every dollar."

Hunt has stated several objectives for the department under Robertson. They include decentralizing decision-making authority, restoring employee morale, closer scrutiny of the department's equipment and motor pool and working more closely with the bid-rigging oversight commission, Gupton said.

Robertson recently made his first changes in department personnel by hiring two administrative assistants and by announcing his plan to hire Floyd Bass as an assistant secretary. He also announced that 183 jobs would be lost within the year and that 360 other jobs would be cut by July 1983.

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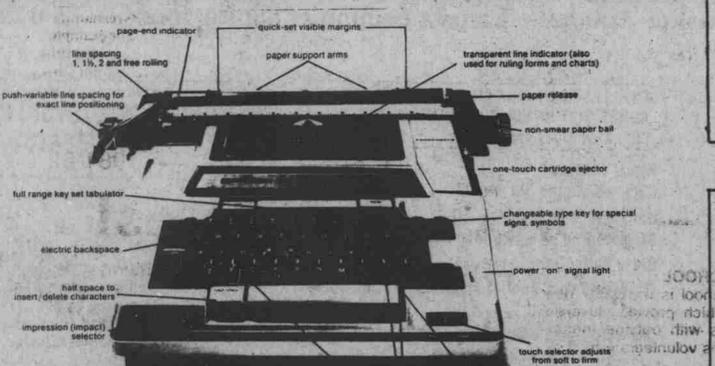
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