

# Latest Voyager I photos reveal big differences in Jovian moons

United Press International  
PASADENA, Calif. — Leaving Jupiter and its inner moons behind, Voyager 1 radioed back the first close-up pictures of the satellite Callisto Tuesday, showing a battered, apparently ancient crust unlike anything seen before.

The photos of Callisto, the last of Jupiter's four biggest satellites, added to the mystery as to why the moon Ganymede and now Callisto show the impact scars of earlier times while the bright orange moon does not.

Callisto was the spacecraft's last target until it reaches the ringed planet Saturn in November next. It will examine six satellites before Voyager 1 cruised by Ganymede Monday night and then sped on past Callisto Tuesday. Io was examined Monday morning, after the spacecraft swept past Jupiter.

The other big moon, Europa, was examined earlier. The new Callisto pictures showed a spectacular ringed crater which Dr. Laurence Soderblom of the U. S. Geological Survey said suggests the satellite "has a crustal character very much different from anything we have seen." He speculated that the rings may have been caused by an icy surface unable to stand the impact stress and collapsed in the ring-like manner.

The surface was densely cratered, which indicates great age, he said, and early differentiation into layers of rock and ice.

Callisto and Ganymede, both about the size of Mercury and believed to be half water and half rock, are vastly different from Io, the smaller, rockier satellite closer to Jupiter.

Io's mottled orange, yellow and white surface has been sculptured by some kind of erosional processes which produced complex depressions, enormous cliffs, broad plains and abundant troughs that seem to have been carved by water. Notably absent are craters produced by meteoroid impact.

Ganymede's brownish-gray surface, in contrast, looks peppered with impact craters. The sharply defined craters are surrounded by white material — possibly relatively fresh ice — splashed out of the crust.



Dr. Max Costa, assistant professor of medical pharmacology, checks on the progress of cultures he uses in tests to determine whether metal compounds are cancer-causing. Costa says the tests are 60 times cheaper than previous methods used for cancer detection, and considerably faster.

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## Research by A&M prof Cancer test has new use

By CATHY TERREL  
Battalion Reporter

Many metal compounds may cause cancer, says a Texas A&M University researcher, the first to employ a research method using hamster fetuses to test for carcinogenic activity of metals and their compounds.

Although this method has been used for about 20 years, Dr. Max Costa, an assistant professor in medical pharmacology, was the first to use this method for testing metals.

This method takes less time and money than the way federally sponsored research determines carcinogenic substances," Costa said. Present carcinogenesis tests involve injecting experimental animals with suspected carcinogen and waiting one to two years for possible tumor development.

In fact, Costa calculated the savings and found his method 60 times cheaper. "Plus all my research can be done with just one hamster," Costa began his research two years ago and has completed one year of a three-year \$90,000 grant from the National Institutes of Health.

"We must take it into perspective," Costa said. "What we must do is check the possibility that humans may be getting a high enough dosage of cancer-causing metal compounds without even being aware of it."

Costa points out that welders breathe chromium-rich fumes all day long, and that chromium is on the list of proven cancer-causing metals. "Nobody's telling them to wear protective breathing devices, it's incredible," Costa said.

Costa collects hamster fetal cells and grows them in cultures, then exposes the cells to metal carcinogens. Under a microscope, the trained eye can tell the difference between a normal cell and a transformed cell by the way the cells grow. Costa then counts the number of transformed and normal cells.

To verify that cancer is being induced in the tissue culture, the transformed cells are injected into specially selected lab mice which only allow for the growth of malignant cells from a variety of animal species.

Development of tumors is considered confirmation that the metal induced cancer in the culture.

Costa is working on a book that will show how to conduct this type of research.

Although Costa believes the tendency to develop cancer is inherited, he is worried about the possible exposure to carcinogenic metal compounds that people may unknowingly come into contact with everyday, including the high-nickel content of dental fillings.

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Battalion photo by Bill Wilson

# Song, comedy delight audience

By KAY WALLACE  
Special to The Battalion

The hardest success to make is a remake of a success.

Yet a Bryan-College Station audience was easily and happily entertained Tuesday night by Texas A&M University's MSC Town Hall's stage presentation of Rodgers and Hammerstein's "The Sound of Music" in Rudder Auditorium.

The musical is based on the true story of a young woman training to be a nun who is sent to be a governess to the seven children of an Austrian Naval captain widower. Through her singing talents, she is able to win the hearts of the children, as well as the captain. Eventually the captain and the governess fall in love and marry, but it is the eve of the Nazi takeover of Austria, and escape is vital.

In the role of the charming, but flighty would-be nun, Maria, Sally Anne Howes (remember her from Chitty Chitty Bang Bang fame? She played Truly Scrumptious to Dick Van Dyke's Professor Caractacus Potts) was a believable songbird.

But her counterpart, Earl Wrightson as the demanding

widower-father of seven, Captain Georg von Trapp, left something to be desired as an alluring romantic for Howes to fall in love with. Physically, Wrightson is older, short, husky and appears more ready to step into another role he has played — that of Tevye in "Fiddler on the Roof."

But never mind, the von Trapp children were a delightful diversion to the underlying romance. In step, smiling, on cue and unusually audible, they were a convincing family group. All of them have acting, singing and dance backgrounds and hold numerous stage credits.

Capturing several laughs was Lois Hunt, as the conniving Elsa Schraeder, trying to charm the stalwart Captain into marriage. And understudy Ted Bouton playing the role of Max Detweiler, an uncle to the von Trapp children, prompted several snickers as the line-walking, make-a-buck Detweiler.

All in all, the performance was very well received by the audience, which gave standing ovations for the cast during the curtain call.



Maria (Sally Anne Howes) stands at attention while Captain von Trapp (Earl Wrightson) whistles for his children in "The Sound of Music" presented last night at Rudder Auditorium by Town Hall.

## New Jersey reining in its antique laws

TRENTON, N.J. — Residents and visitors of New Jersey, you can rest easy now — you won't be breaking the law anymore by riding your horse faster than 4 mph across a sidewalk.

And you won't have to stick to the three minutes allowed to unload passengers from your car in front of a church.

Gov. Brendan Byrne has a plan to repeal 138 useless laws and sent a list of "archaic, unnecessary, duplicative or inconsistent" measures to the Legislature for repeal Monday.

Provided Byrne's proposals are approved, you no longer will be breaking the law if you:

- Hitch your horse to a public lamp post or fire hydrant;
- Drive a horse-drawn sleigh on a highway without a sufficient number of sleigh bells on the harness to warn others of your approach;
- Race horses on a highway;
- Refrain from stopping your car and remain stationary if a horse is passing you in the opposite direction on a highway;
- Overtake and pass a trolley car;
- Follow a trolley car at a distance of less than 10 feet, and
- Knowingly hinder or delay the movement of a trolley car through an intersection.

## Wyatt's Daily Specials

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Friday	Deluxe seafood platter — 1 piece of fish, 2 fried shrimp, 2 fried crab rolls, tartar sauce, hush puppies, french fries and creamy cole slaw	\$2.89
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