Voyager Unfolds Saturn’s Rings

Voyager 1, the first major space probe to the outer planets, has completed its assigned tasks and is now on its way out of the solar system. In a hectic two-week mission to Saturn, Voyager gave scientists and the world their best view of the planet, its many satellites (including at least three unknown ones), and its rings themselves—whose structure turned out to be exceedingly complex.

**Animals Predict Quakes**

By Lee Sanderlin

Dr. Robert Lindberg, a UCLA biologist, gave a talk on November 10 about the use of animals to predict earthquakes. He is involved in a study in which animals left in shelters near the San Andreas Fault are monitored for abnormal reactions, and these reactions are correlated with later earthquakes. So far, the results have been mixed.

America is currently supporting animal earthquake detection mainly because of reported Chinese successes in the field. On many occasions all over the world, though, stories of unusual behavior by animals before earthquakes have come to light. The problem is to determine how much of what is known is of predictive significance and how accurately it can be expected to come true.

There are many possible causes. For instance, predators may be able to detect earthquakes by their effect on the earth’s magnetic field. Other animals may detect, including changes in electrical and magnetic fields. Sharks are known to be most sensitive to electric changes, and bees to magnetic changes.

**Bonfire Ends In Violence**

By Phil Albert

Last Saturday, in the Caltech tradition, a bonfire was held to celebrate a football victory. For an apathetic campus, the bonfire drew a large crowd, and it also drew a new factor of violence in a usually peaceful environment.

Anthony Miller, a Caltech undergrad, in an attempt to subdue an uncontrollable crowd, was taken to Huntington Memorial Hospital as a result of the motorist hitting him in the mouth.

The diversion was scheduled at the corner of Oakland and Colorado Blvd. At 11:11 pm, the bonfire was lit in the intersection of Cor­ dova and Los Robles, in front of the Hilton Hotel and the KROQ radio station. The fire engines arrived approximately 30 seconds later and put out the fire before it got going. The quick response of the fire department was due to the fact that KROQ was informed of the real location of the bonfire and announced it on the radio.

The crowd slowly drifted in the direction of the Caltech campus, but in a move to confuse the police, another whistle was blown and everybody started running in one direction. As the crowd walked back to the campus, traffic backed up behind the blockade of people walking down Cor­ dova Street. Most motorists were understanding and either drove on the sidewalks or made U-turns. One motorist, however, who later admitted to being drunk, stopped in front of the crowd and then drove through the intersection while the light was still red, after seeing the crowd approaching. He then stopped his car and yelled “Who hit my car?” The driver grabbed the closest person in an apparent attempt to start a fight, and at that point Anthony Miller attempted to subdue the driver. According to Miller, “He grabbed [Robert] Shoemaker, and I grabbed him. When he let go of Shoemaker I let go of him. Then he [asked] ‘Who had me?’ and I said I did, and he hit me.” After unsuccessfully at­ tempting to start an altercation with someone else, he made the statement that “you college punks are too smart to know that you’re stupid.”

Amid the confusion, his door was locked and closed, locking him out of his car,

**Voyager Unfolds Saturn’s Rings**

by Gavin Claypool

As Voyager approached the planet in early fall, long-range photographs of the rings revealed that the famous “divi­ sions” discovered by Earth­bound astronomers were not empty space at all, but contain darker and less massive rings. The major rings turned out to be made up of smaller rings, so that the overall ring took on the appearance of a cosmic phonograph record. But the greatest conser­nation on the part of scientists came with the discovery of spoke-like structures within the second-biggest, or “B” ring. The spokes remain visible for several hours, despite the fact that the rest of the individual particles: the inner part of the spoke should be moving faster than the rest of the ring as it breaks up. Some force in addi­tion to gravitation appears to be acting on the particles, but the mechanism remains obscure at present.

Saturn’s moons, which now equal Jupiter in number known (15), were serious targets of Voyager’s scrutiny. Only Phoebe, the outermost, retro­grade satellite, was bypassed; even Hyperion and mysterious Lapetus were photographed, though they were over 500,000 miles away at closest approach. The prize, of course, was Titan. Largest of all known satellites in our system (it’s bigger than that at least one planet: Mercury), it received a glancing kiss from Voyager as the probe moved in on Saturn. A mere 2500 miles from the assumed surface of Titan, whose opaque atmosphere yielded up nary a glimpse of it.

The atmosphere proved a surprise too. Rather than being primarily composed of methane and perhaps some exotic organic compounds—as some scientists believed, Titan’s atmosphere seems to be mainly nitrogen, with less than 1% of it methane. There are a few isolated clouds, the like of which has never been seen before. The speed of light in this green hazy atmosphere is only 99% that of the speed of light.

Dr. Readhead utilized many slide presentations to give an account of his new undertaking. He converged on two galax­ies, NGC 6251 and PGC 6251, which were made up of streams of hydrogen. The tremendous amount of hydrogen observed near these galaxies is difficult to explain away, but it is clear that they are indeed what is called a galaxy.

**Resolves Quasars to a Hair’s Breadth**

by Tracy Furutani

Unusual discoveries in the field of radio astronomy, characterized Wednesday’s Watson Lecture. Dr. Anthony S. C. Readhead, Research Associate in Radio Astronomy, described new methods in radio-telescopy focusing on the modern technique of employ­ing interferometry. This method uses sets of two or more antennae to set a sizeable distance apart and each of a set member’s signal interfering with the other’s. These signals can be interpreted and then interpreted by humans.

What is truly amazing about VLBI is its fine resolu­tion (the measure of how much detail that can be obtained). In ordinary light telescopes, its resolution is about one arc­second, even for the great Palomar telescope. Using radio waves and dishes many miles apart, the resolution can be increased to one-thousandth of an arc-second.

Dr. Readhead utilized many slides during the lecture, show­ing many of the enhanced images of various radio galaxies. He merged on two galaxies in particular: 3C273 and NGC 6251. The former is the first object discovered receding from the frame of reference of Earth at a significant fraction of the speed of light. Using VLBI, a “glob” of matter, ejected from the galaxy proper, was discovered to have moved 30 light years (with respect to Earth) in three “years.” Ad­justing for relativistic effects, the “glob” is moving at nearly

The Bonfire, which was obstructing traffic. The Pasadena Police arrived at the scene and the following ex­change occurred between Miller and the police officer.

“Id’d like to press charges.”

“For what?”

“Cause the guy hit me.”

“What did you do that the guy hit you?”

“Okay, this is what hap­pened—”

“I know what hap­pened—what did you do?”

At which point Miller told his story and the officer replied, “Well, I should have hit you, too.” The angry motorist was allowed to leave the scene, and Miller was taken to the hospital.
Editorial

Stuart OPPORTUNITIES: The transportation, coordinated by Uncle Mike, leaves: THE CALTECH Y... fly-by:

...in one building is an affront to world civilization, courses begin to achieve this end, but this institute needs to offer creative painting courses, performing arts education, and reality and its mathematical model fit so well together. The reason this correspondence is so good is that our minds perceive the bridge between mathematics and reality so vividly. But since our perceptions and our reality are inextricably linked, one might just as easily equate this correspondence with the actual meaning, “one truth.” The one truth that Caltech promulgates is the rationalist doctrine, and consequently, students receive a dangerously biased educational programming. Since the nature of scientific achievements cannot be seen as an individualistic activity, this institute right this unbalance if it is to acknowledge its responsibility to those whom it seeks to teach.

The rationalist doctrine is essentially a causal one: event ‘A’ causes event ‘B’. In learning the sciences here, one finds that the action and interactions of physical phenomena are governed by a mathematical model, and this model is so complete that it can indicate future behavior of a system given only its present state. Even in modern physics, the evolution of quantity is dealt with in terms of the probabilities of certain situations, the principles involved are patently mathematical. The question professors tend to hedge at Tech is why reality and its mathematical model fit so well together.

The California Tech

Friday, November 21, 1980
Vol. V

LETTERS

Too Much Edited

Editors,

I would like to make a public comment in reference to my article on Interhouse (Nov. 14, 1980) and that in my final version of that article, I refered to Fleming House (The House of the Machine) as The Big Red Machine, but it appeared in print with the word "Bobsled" in it.

While I agree that editors have the right to alter articles submitted by the writers, I would assume that alterations are limited to correction of grammar, (my grammar ain't so good) and the addition of emendations. I write articles for the paper and when some thoughtless editor alters my articles to point where I can no longer claim it as my article, why does it have my byline? This is clearly an act of irresponsible editing, jose

Phil Albert

Fleming House

Vachs's Lacking

To the Editor:

It was with great surprise that many of us read about the Mudeo in last week's paper. I have yet to meet anyone who had heard about it beforehand. Apparently there was no publicity at all for it—it was not announced. The word circulated among the Fillers or ballroom around campus.

To some of us who participated as freshmen, it was disappointing to miss this year's Mudeo simply because there was no publicity (especially considering this year's freshman class). It constitutes a very big lack on the part of the junior class president to have failed to inform a large portion of the student body about a very traditional and very much looked-forward-to event.

Sandra Loh

IMMIGRATION ATTORNEY

Stuart I. Folinsky

2459 Mission Road
San Marino
Phone: 799-0651

L.A. Office: 368-9540

CIVIL ENGINEERING OPENSINGS — OPPORTUNITIES

Department of the Navy, Division of Civil Engineering is accepting applications for Engineers for openings beginning in June 1981. Engineers for openings must apply and if screened successfully can qualify for up to $800 a month retention during summer. Training program consists of 12 weeks including human resources management, public works, contract administration and construction operations.

Male/Females in an accredited engineering program leading to a degree in civil, mechanical, electrical, architectural, construction or ocean engineering. U.S. citizens/physically qualified.

Excellent salary/benefits package

Applications available in the Financial Aid Office, 208 Dabney Hall.

Jobs for Pre-Meds

The American Association of Medical Colleges is encouraging science students to consider a career in medical research. Selected students will be assigned to laboratories at Caltech for ten-week period. The applicants must be enrolled in a medical school, a university, or interested in the field of medicine. Students are given to students who will have completed their first year in the fall of 1980. Applications must be received by January 15, 1981. Please send your application to Office, Room Dabney Hall, for further information.

Compliments demonstrate creativity and leadership, a interest in the aerospace science and technology, and person need. Interested applicants apply by letter no later than the January 12, 1981. For further information, please contact the Office, Room Dabney Hall, for further information.
Dr. Kahl is New Tech Counselor

By Phil Albert

The Student Health Center has a new Director of Counseling Services, Dr. Sigrid McPherson, who is taking over the position from Dr. Sigrid McPherson. Dr. Kahl works with the counseling center part-time, and he also keeps a private practice going part-time in Pasadena.

Dr. Kahl went to school at Stanford University and after a combined internship in Los Angeles, he practiced with a public mental health center, until he went into private practice. Dr. Kahl likes the challenge of dealing with the problems unique to the Caltech community.

Another change is the possible end of the drop-in center. The drop-in center was established to allow a method of impromptu and anonymous counseling. The drop-in center is located in the Babes building and is usually staffed during the day. Dr. Kahl mentioned that the drop-in center was used very little, and that the counselors could be better used at the Health Center. Dr. Kahl said he would be interested in having a drop-in center for the students. So, if you would like to see the drop-in program continue, or if you just want someone to talk to, go talk to him.

Uganda and Soviet Union are Focus of Human Rights Talk

By Joseph Garcia

On December 3, the Caltech campus will focus its attention upon a vital issue in the world—the issue of human rights. Responding to this concern for human rights, the Caltech Y, in conjunction with Amnesty International, will present a discussion entitled “Human Rights in Uganda and the Soviet Union: Eye-Witness Reports by Caltech Students,” at 8:00 pm on December 3, in Winnett Lounge.

The program will be presented by three speakers. The first speaker will be Jack Conn, a representative of Amnesty International, who will speak on the programs surrounding United States' ratification of the United Nations International Human Rights Covenant. The balance of the program will be led by two Caltech students, one from the Soviet Union and the other from Uganda. They will each speak on current abuses of human rights in their respective countries.

Jack Conn's talk will concentrate on the controversy surrounding refusal of the U.S. to ratify the U.N. International Human Rights Covenant. The next part of the program focuses upon the abuse of human rights in two countries of the world; the Soviet Union and Uganda. This segment will feature two Caltech...
MAASAI FACE 20TH CENTURY

By H. N. I. Mayhem

The latest lecture in the Leakey Lecture Series featured Tepillic Ole Saitoti Tenzania. Mr. Saitoti is a member of the Maasai tribe and was able to give his listeners a true picture of the tribe's way of life. His talk proved to be interesting and informative, and it made one realize the dangers inherent in trying to force a society to conform to the ways of the Western world.

The Maasai are herdsmen, and live now in much the same way as they have for centuries. They obtain all of their food—needs; drink, clothing—from their herds of cattle, sheep, and goats. Periodically, they move from place to place in search of good grazing lands for their herds. For all of this, the Maasai are by no means simple; they possess a well-developed and highly complex culture.

The Maasai believe that the society, the group as a whole, must be considered above all else. For this reason, the roles of each member are well defined according to age and sex. Young children, for example, are expected to care for the younger animals of the flocks. Growing older, boys are expected to do more of the work of caring for the flock, while girls take on the job of caring for the home. All Maasai children must pass through a highly ritualized and rather painful initiation process in order to be considered as adults of the society, who in purpose of the ritual and of the pain is to teach the child, now an adult, that he or she must now learn to bear pain in order to give to the society instead of receiving from it.

After initiation, women become eligible for marriage, while the men are trained as warriors. Warriors are responsible for protecting the village from predators and other tribes. Unlike the women, whose status in the society is fixed once they are married, men must pass through several more levels of membership in the society. The first transition occurs at about the age of 30, when a man stops being a warrior and becomes a junior elder. According to Mr. Saitoti, this transition is very important and highly emotional, because it marks the end of the period when a man is most important to the society. The rituals surrounding this new stage of life are very extensive, and, except for an opening ceremony, are open only to the warriors and the elders who must perform the initiation ceremony.

After a man has been a junior elder for several years, he reaches the status of full elder. As such, he becomes responsible for the leadership of his village and for the continuity of the society's tradition and culture. Perhaps the most important facet of the Maasai tribe's life style is the way in which they have lived in harmony with their environment. At the end of each day, the Maasai bring all their flocks back to their village. This allows the wild animals of the area to come at night to the same grazing lands and water holes of which the Maasai make use. In this way, competition between the Maasai and the wild animals has been reduced. Another example of this harmony is the way the Maasai move about in response to the change in seasons. During the dry season, the grasslands are already dry enough to withstand intensive grazing. The Maasai move their herds to the highlands where the grass remains thick enough for grazing. Lowlands can be used during the rainy season; the Maasai move their herds again to prevent overgrazing of the highlands.

Unfortunately, this harmony between the Maasai and their land is now being threatened by the efforts of the Kenyan and Tanzanian governments to bring the 20th century to the Maasai. Many of the highlands the Maasai once used for grazing have been overtaken by agricultural development and are now used for growing crops. The Maasai must now begin to use the lowlands during both the rainy season and the dry season. If this trend continues for very long, there will be no grass at all on the lowlands, and large sections will become desert. Without an available supply of grazing lands, the Maasai will be forced to give up their way of life. This will lead, as it has for many other societies, to the disintegration of the Maasai as a society and the loss of their culture.

---

**Hopschotch Comedy In Fine Tradition**

The merit of Hopschotch (playing locally at the Esquire Theater on Colorado Blvd.) is the fine comic performance of Walter Matthau and Glenda Jackson. The sardonic criticisms exchanged between Jackson and Matthau are reminiscent of those tossed about by Myrna Loy and William Powell in the Thin Man movies.

Walter Matthau is a disgruntled ex-CIA agent who decides to get back at his boss and the Establishment by publishing an expose of CIA bumbling. Washington is naturally a little upset and starts to track him down. Moscow is also interested in a CIA agent's memoirs and begins its own search for Matthau. But Matthau, with help from Glenda Jackson (another enemy), manages to skilfully elude his pursuers in an antic-chilled chase around the world.

The excellent teamwork of Glenda Jackson and Walter Matthau, combined with the pleasure of watching authority figures appear foolish makes Hopschotch a very enjoyable film.

—Lisa Grenier
The Voyager I flyby reveal one of the most enigmatic results from the recent flood of Saturn data. These 'Ring Spokes', as they are called, are ephemeral features which last only about 3 hours, and have so far eluded explanation.

Taken on October 4th and 5th from a distance of about 51 Million kilometers, these photos from the Voyager 1 flyby reveal one of the most enigmatic results from the recent flood of Saturn data. These 'Ring Spokes', as they are called, are ephemeral features which last only about 3 hours, and have so far eluded explanation.

Enjoy Lunch & Dinner
And Pizza With Us
or Take It Out

PRIMO
Italian Specialties
Gourmet

350 S. Lake Ave.
Pasadena 795-4749

in the Colonnade Mall
across from Bullock's

Monday-Saturday 10 a.m.-8:30 p.m.

WITH THIS COUPON — GOOD AFTER 5 P.M.
LIMIT ONE COUPON PER CUSTOMER
You may buy ONE drink in a glass
beer or wine, or a soft drink
for $e with purchase of any dinner or pizza

FROM BERLIN
AN ART GALLERY
PROGRAM
TO CELEBRATE
THE LOS ANGELES
BICENTENNIAL

BERLIN
LOS ANGELES

THE ART GALLERY
PROGRAM.

During the Berlin/LA 200 Festival a number of leading art galleries in the Los Angeles area will feature Berlin artists.

For specific viewing hours, please call the respective gallery. Admission Free.

Stephen White's Gallery, 835 No. La Cienega, L.A.,
Tel: 213/657-6995. Photographs by Hans W. Mesbe.
Stage One Gallery, 420 W. Chapman Ave., Orange,
Tel: 714/639-8560. Paintings by Laszlo Lakanet;
Silkscreens by Barbara Nemitz; Sculptures by Jakob Mattner.
Mirage Edition Gallery, 1662 12th St.,
Santa Monica, Tel: 213/459-3017. Etchings by Günter Grass.
M.M. Shino Gallery, 5820 Wilshire Blvd., L.A.,
Tel: 213/935-1010. Promotions by Kunito Nagasaka.
Los Angeles Institute of Contemporary Art, 220 S. Robertson Blvd., L.A.,
Tel: 213/559-5033. Wolf Vostell Conceptual Performance.
Janus Gallery, 8000 Melrose Ave., L.A.,
Tel: 213/399-9122. Paintings by Raimund Girke.
Gallery West, 107 S. Robertson Blvd., L.A.,
Tel: 213/271-1145. Paintings by Andreas Brandt.
Gallery "Untaxed", 899 Beverly Blvd., L.A.,
Tel: 213/275-7473. Paintings and drawings by Peter Ackermann. Paintings by Brigitte Hein und Peter Grämer.

For further information call the Berlin/LA 200 Information Office: 213/627-3731

This is an endorsed Bicentennial project.

This program is subject to change without notice.

"Enjoy! Berlin's birthday present to
L.A., was meant for everyone of us to share, savor and remember." — Werner Klemperer, host and spokesman
Berlin/LA 200 Festival.

Tech to Debate

By Dave LePoir

The Caltech debate team, in its second year of modern existence, is busily pursuing victories. The CEDA debate league topic now is: Resolved—Protection of the natural environment is more important than satisfying U.S. energy demands.

Caltech takes the approach on the Affirmative side that use of coal is the wrong value. They argue against the status quo policy of doubling coal production in the next few years. They state that as much as half of the air pollution is due to coal burning. Using a study that relates air pollution to deaths, they conclude that their plan could save 70,000 lives. Another detrimental effect they quote is the warming of the atmosphere by CO2.

Other Affirmative teams, that have to be refuted by the negative team, argue conservation, nuclear energy, coal, petroleum, toxic wastes, and philosophical approaches to energy. The teams are usually from the west, such as UCLA, USC, CSU-Northridge, UC Berkeley, and USAF.

The teams have gone to many tournaments, and among the highlights have been: Dave Sahnhow and Michael Terepka taking 3rd place at Cal State L.A., and Wally Walters and Jeff Lavallaro going 5-3 at Berkeley. Upcoming tournaments are at UCLA and the Air Force Academy.

There will be a new topic for the second half of the year, but it will be announced sometime near Christmas. For those interested, the Caltech debate coach is Richard Kirkham (who is also an assistant coach at USC), and he can be found in 231 Baxter.
assumed a familiar pattern. Although the post-Amin murders may have been of a different order of magnitude as under Amin's rule, we still find other severe abuses of human rights besides the abuse of the right to life. The protection of human rights is particularly important now as the first free elections since the early 1960s begin to take form. Presently, two of the four major political parties in Uganda threaten to boycott the upcoming election. The controversy surrounding this incident with the verified voting procedure. As it now stands, the method of voting is still a voter's ballot into a ballot box specifically marked for each candidate. The parties threatening boycott feel that this voting procedure unnecessarily leaves a voter open to the threat of intimidation. So they'll decide what the程序 will be about. Don't just go to this article and totally forget about this event. Mark it on your calendar. And make it to the Copley-Wood Memorial Lounge at 8:00 pm on December 3, 1980, Caltech's Human Rights Day.

FROM BERLIN
A FESTIVAL OF EVENTS TO CELEBRATE THE LOS ANGELES BICENTENNIAL

Berlin's Protection Powers—Americans in Berlin. This exhibit provides information on the Protection Powers—USA, Great Britain and France and their friendly relations with the City of Berlin and her people. Approx. 12,000 allied troops live in Berlin (in West) among them 6,000 Americans who call this city their second home for a certain period of time. With all family members included, the American community numbers 15,000 people. Cal Museum of Science & Industry. Nov 26-Mar 21. Daily 10 AM-5 PM except holidays. Admission Free.

DECEMBER 1


DECEMBER 2

DECEMBER 3

DECEMBER 4

DECEMBER 5
Triadisches Ballett. Performing the "Triadic Ballet" dance as a visual interpretation of music and sculpture in movement. UCLA Royce Hall. 8:30 PM. Tickets $9. $8 ($6 students). Groupe Neue Musik. This 17 member ensemble is a foremost contemporary classical music group in Berlin. Cal State Colleges (Student Union Theater. 8 PM. Tickets $5. $3 ($2 students).

DECEMBER 6
Triadisches Ballett. UCLA Royce Hall. 8:30 PM. Tickets $9. $8 ($6 students). Groupe Neue Musik. Occidental College Thorne Hall. 8:15 PM. Tickets $5 ($3 students).

DECEMBER 7
Triadisches Ballett. UCLA Royce Hall. 8:30 PM. Tickets $9. $8 ($6 students). Groupe Neue Musik. UCLC Irvine Village Theatre. 8 PM. Tickets $5 ($3 students).

DECEMBER 8

For further information call the Berlin/ LA 200 Information Office: 213-962-3733.

This is an endorsed Bicentennial project.

This program is subject to change without notice.

"The biggest birthday present ever is this one. From Berlin to L.A. It comes from the heart—take it to yours!" — Werner Klemperer, host and spokesman Berlin/LA 200 Festival.

A la mode work-study job—see Mr. Rejes in the Placement Office, Room 8, Dabney Hall for further information.

Classified Ads

HELP WANTED
Person to service and precipitation stations. Must have flexible hours and dependable transportation. Science student preferred. Excellent pay for time involved. Contact Bob Brewer 992-4103.

FOR SALE
GENE RUBIN AUDIO. We carry only three top manufacturers: Newgavner, Residency for microphone. Responsibility for multithousand dollar budget, advertising, and product equipment. Good commissions, experience helpful but not required. If interested, contact the Tech immediately (107 Weinsten). Buying or selling something? You, too, can take out an ad in The California Tech. $2.50 per inch plus 40¢ per extra line for Classifieds. Bring ad copy to the Tech office or call extension 2154. OK.?
Caltech Beats MIT Again

By Lee Sunderlin

The Caltech Beavers beat the Mexicali Institute of Technology Spartans, 26-20, to close out their home season in a game with a second win. The see-saw game, attended by a relatively large crowd (because of free drinks), was probably the most exciting game of the year. In the words of one fan, "I haven't seen a game like this since junior high school.

Mexicali scored first on a pass by a halfback. Caltech then ground down the field to tie it, 6-6, Mexicali scored again, but Tech took the lead at halftime, 14-13, with a touchdown and a two-point conversion. Caltech widened the lead to seven, but MIT tied the game, 20-20, at the end of the quarter. Fortunately, the Beavers quickly retaliated, and held on to win.

The bonfire that night went off without any problems, but the fire department was well prepared and quickly put it out. The only altercation occurred afterwards, About 50 students were marching down a street when a car bulldozed its way through them. Some students pounced on the car as it went through. The somewhat drunk driver, angered by the damage to his new car (there was none), got out and punch-

Pucksters Press PJC

By Grant T. Yokum

Last Sunday night Pierce Junior College ventured to Pasadena for a challenge. The Beavers were going to face a team that had already lost to the Caltech Pucksters in the first contest between the two teams. The opening face-off Pierce had only four skaters and one goalie. Normally, five skaters are on a side in a contest. The Beavers, thinking to be an easy win, skated defensively and were soon put to shame as they found themselves behind 4 to 1 at the halfway mark. Suddenly, awakening to the hard crucial fact that this was a hockey game and not a picnic, the Beavers rallied in the space of ten minutes to end the second period in a 1-1 tie.

The hard-fought third and final period remained scoreless until John Christenson flicked in his second goal of the evening. Undaunted, Pierce retaliated with a score in less than 40 seconds. After a short rest Christenson attacked again. This time, after drawing two defenders to him, John neatly passed to Andy Gelman who rifled the winning goal into the net. The icing on the cake came with only 30 seconds remaining in the game when Louis LaMarche scored on an open net. Louis, a French Canadian, shouted his entire English vocabulary, "I take de puck! I shoot de puck! I score de goal!" Thus ended the 8-6 win for Caltech and marked the Pucksters' first victory of the '80-81 season after suffering a defeat at the hands of Valley J.C. and a tie with U.C. Irvine.

Other items of interest include:
1) Norm Bobroff, who missed the game due to his handling of hydrofluoric acid, was replaced by Sanford Krasner on the Veteran line (known as the "Vets") which includes Andy Gelman and John Christenson.
2) The Vets accounted for 5 goals against Pierce and is the team's most productive line so far this year.
3) The scoring Sunday was rounded out by Eric Chael and Steve Percy.
4) Fred Culick, the father of three, forgot his cap and missed the first period of play when he returned home to retrieve it.

A LIT-de Error

Lit 130 was inadvertently omitted from the preregistration list of courses for the second quarter. The course will be taught by Professor Splitter in conjunction with Psy 101. Course credit may be applied to the 108-unit HSS requirement, but not the 27-unit Humanities or Social Science requirement. The course will consist of an intensive study of major nineteenth and twentieth century works of fiction - by Doshevskaia, Proust, and Kafka - from a psychoanalytic point of view. With background reading in psychoanalytic theory.

Well

from three

never stands still. There's always about two or three stress playing some good music; however, don't get the idea that all the music distracts us from what we're doing. Right now, in fact, my roommate is playing some Pink Floyd, its really great to tranquilize jangled nerves. Ahhhhh... (Sorry I don't have a stereo.)
**Happy Thanksgiving**

**Saturn**

From one kind of hydrocarbons, and the whole is topped off with a chemical photochromic smog. (Of course, all this being done by Uranus to welcome Voyager. The record pattern in the rings is in the recognition of the record that Voyager bears as a gift; the smog is to make it feel at home.) Other surveyed moons may be no more complex than balls of frozen water. They seem to be 10 to 100 times less massive than the Jovian satellites; their density ranges from 1.1 to 1.4 grams per cubic centimeter (1.0 g/cm³ being water). All, except Enceladus, show evidence of massive impacts on their surfaces and no eroding force to smooth them out. The exceptional moon is relatively smooth, indicating that it has not yet had an impact. This caused its icy surface to melt, removing any such features.

- **Sheepdog** moons, which appear to orbit just inside and outside the very last one, may also be present. They may serve to keep particles in the ring from escaping into space and to keep them from dropping down into the lower rings. The five moons orbit a s 500 miles outside the Saturn ring plane and may play a similar role.
- Voyager I followed a trajectory past Saturn that took it below the ring plane before perigee, and is still arcing back above it and away. Its remaining task is a simple one: move close to one or two of the moons in order to determine where the sun's influence ends and the stars take over. In other words, to find the effective boundary of the solar system.
- Voyager II, the probe's sister ship, will have its encounter with the Ringer Planet in August 1981. Its trajectory should allow a better look at some of the other moons before it passes Saturn and heads for a 1986 rendezvous with Uranus. If it continues to function beyond this point, it will be able to send a final message on its way to Neptune in 1989.

**Quasars**

From one arc-second (the angle subtended by a human hair at fifty miles), another smaller, yet as precisely defined jet of energy, is extended straight out of the core in the same direction as the larger streamer. The energy emitted was calculated at approximately 10^3 ergs, equivalent to the energy released by the complete annihilation of 100 million suns. Dr. Readhead postulated that these jets (the cores of the streamer, the smaller jet, and the incredible energy) could be explained by a rotating black hole of around one billion solar masses. In the next few years, quasar research will be "The Recombinant DNA Revolution", given by Dr. Nor-

**Off-Campus Jobs**

House sitters—get away from all... occasional weekends.

Robot developer... students to repair computer games... 10 hours per week... $20 per call.

Telephone receptionist and billing in law office, 20 hours per week... $5 per hour.

Research assistant in new company... part-time work involves isolation of gamma globulin and albumin from plasma of different animal species. Experience in chromatography, gel filtration, electrophoresis, and immunoelectrophoresis required. Flexible hours... $7 per hour.

Xmas job: telephone sales of Christmas gift certificates... work at home or in office... flexible hours... paid by sales.

If any of the above job opportunities interest you, call Ruth Turpin immediately, x2362.

**Maasai**

From the Maasai recognize the fact that the Maasai must change and can no longer live apart from the rest of the world. However, he believes that this can be done without endangering the Maasai way of life. For instance, money now being used for agricultural development could be diverted to the Maasai to help them improve breeding techniques and increase their herd size without harming the land.

These extra animals would constitute a source of food for the rest of the country, in the form of meat and grain. Mr. Saitoi pointed out that if we do this, the harmony between man and nature will continue. The government's plans for crops necessitate that the wild animal be driven away, while according to Mr. Saitoi's plans, wild and domesticated animals would live side by side as before. Given the number of animal species threatened with extinction, and the small amounts of food left to live on, it becomes apparent that Mr. Saitoi has the right idea.

---

**Choose from hundreds of skills.**

We have hundreds of skill training pro-
grams from which you can choose, if you qualify and want them.

The Army will train you in one of more than 200 fields, including:

- Law Enforcement
- Communications
- Lab Technology

You can count on over $501 a month (be-
fore deductions) while learning. Plus medical and dental care.

Think about what you really want to learn. Then find out more about the field that interests you by calling today.

Serve your country as you serve yourself.

---

**Army Opportunities**

**Call Army Opportunities**

Sergeant Craig D. Nady

792-0414