



## Tech Observes UN Day

A week from tomorrow, Saturday the 18th, is United Nations Day. The Caltech Y, as campus host, and the Pasadena branch of the United Nations Association, are providing a lively program to celebrate the U.N.'s 35th birthday. Of most interest to students will be a presentation by Lord Caradon at 10 am in Winnett Lounge. He will speak on "My Understanding of the U.N. and the Problems Facing It."

*Come one, come all to the highly acclaimed Seven-House Party. Thrills and chills await you on the Olive Walk (or maybe the Quad; we don't know - its late and our deadline's coming and we need the space).*

After finishing his studies at Cambridge, the future Lord Caradon entered the Colonial Service and was posted in Palestine as an Administrative Officer. He served in some of the toughest areas in Palestine during the troubled thirties, in the Colonial Office in 1938, and went on to Trans-Jordan for three years as Assistant British Resident, later being seconded to the British Military Administration in North Africa. In 1943 he went on to Cyprus as Colonial Secretary; he acted as Governor in 1944. There followed two years as Colonial Secretary in Jamaica and then four as Chief Secretary in Nigeria; in both countries he several times acted as Governor, and in 1951 he returned he returned to Jamaica as Captain-General and Governor in Chief, a post he held from 1951 until 1957. In Nigeria he played a major part in the preparation of the first federal constitution (introduced in June, 1951) and in Jamaica he guided the constitutional developments leading up to internal self-government. He later became Governor of Cyprus in the disorders of the late fifties and helped to achieve a settlement leading to the independence of Cyprus in 1960.

Lord Caradon was Minister of State for Foreign and Commonwealth Affairs and United Kingdom Representative at the United Nations from 1964 to 1970. Since then he has performed assignments for the United Nations in Africa and elsewhere and has traveled widely including visits to the Middle East.

Of his work as a British administrator in Palestine, Jamaica, Nigeria and Cyprus and later as an Ambassador and a Minister at the United Nations, Lord Caradon described himself as "an expert in international frustration" and went on to say, "I have no illusions, but I am not disillusioned. I believe in the obligation of optimism."

Following Lord Caradon's talk will be a lunch in the Athenaeum (\$7, students \$3),

after which Marge Wyatt, the President of the Pasadena School Board, and Ray Cortines, Superintendent, Pasadena Schools, will speak on "Value of Students Learning About the United Nations."

For those interested in more information, the Y Office in Winnett has a pamphlet describing the full program.

## Parsons Project Opens Gates

From the Caltech News Bureau

The ornate Gates Laboratory here at Caltech, which has stood empty since it was damaged in the 1971 San Fernando earthquake [that's funny, we've been taking classes in Gates.—eds.], will begin renovation to become Caltech's main administration building. The project is being initiated as a result of a grant of \$1,000,000 from the Ralph M. Parsons Foundation of Los Angeles. The renovated building will bear the name of Ralph M. Parsons.

The historic laboratory, built in 1917, was the second building constructed on the Caltech campus. Although Caltech's main administration building, Throop Hall, had to be demolished because of severe damage by the 1971 earthquake, it was decided to strengthen and maintain the outer shell of Gates in hopes of renovating it.

"We are deeply grateful to the Parsons Foundation for helping us to realize our fond hope of preserving this venerable building," said Caltech President Marvin L. Goldberger. "Not only will the Parsons grant enable us to begin to rejuvenate a building that has housed many generations of outstanding scientists, but it will relieve a pressing space problem on campus."

The renovated building will house the offices of the Caltech president, the provost, and vice presidents and other administrative and support personnel, who now reside in the Millikan Library and other buildings on campus. Additional private gifts are being sought to complete renovation of the entire building as administrative office space.

The Parsons Foundation, which makes this grant and which functions as an entirely separate entity, was established by Mr. Ralph M. Parsons in 1961.

## Ethnic Scholar Desired

[The following press release was received here at The California Tech, and normally we would print it without comment. However, we noted that, Caltech's required affirmative action policies notwithstanding, there seem to be few, if any, faculty members here who qualify for these postdoctoral fellowships.—eds.]

The National Research Council plans to award approximately 35-40 Postdoctoral Fellowships for Minorities in a program designed to provide opportunities for continued education and experience in research to American Indians and Alaskan Natives (Eskimo or Aleut), Black Americans, Mexican Americans/Chicanos, and Puerto Ricans. Fellowship

recipients will be selected from among scientists, engineers, and scholars in the humanities who show greatest promise of future achievement in academic research and scholarship in higher education.

In this national competition sponsored by the Ford Foundation, with additional support from the National Endowment for the Humanities, citizens of the United States who are members of one of the designated minority groups, who are engaged in college or university teaching, and who hold doctoral degrees may apply for a fellowship award of one year's duration.

Awards will be made in the areas of behavioral and social sciences, humanities, EMP

fields (engineering sciences, mathematics, physical sciences), life sciences, and for interdisciplinary programs of study. Awards will not be made in professions such as medicine, law, or social work, or in such areas as educational administration, curriculum supervision, or personnel and guidance. Tenure of fellowship provides postdoctoral research experience at an appropriate nonprofit institution of the Fellow's choice, such as a research university, government laboratory, national laboratory, privately-sponsored nonprofit institute, or a center for advanced study.

The deadline date for the submission of applications is February 2, 1981. Further information and application materials may be obtained from the Fellowship Office, National Research Council, 2101 Constitution Avenue, Washington, D.C. 20418.

## In Memoriam

### David J. Bagnall

On Sunday, October 5th, at approximately 9 pm, David J. Bagnall, a Caltech freshman, suffered a blood clot in the lungs and died shortly afterwards at Huntington Memorial Hospital. David, who had just turned 18, was the son of Mr. and Mrs. Larry Bagnall of Gainesville, Florida.

Sunday night, after learning he had been picked as an off-campus member of Ricketts House, David was running down the Olive Walk when he stopped, complained of chest pains, and then fell into a seizure. Two students trained in emergency life-saving techniques administered CPR. Medical authorities later

stated that his condition was such that little could have been done to save him. Paramedics soon arrived and continued treatment but David died shortly after being taken to the hospital. David's family has a history of a blood condition conducive to excessive clotting.

Institute officials have been in contact with David's parents and have sent cards of condolence and flowers to his family. David's funeral will be held this morning at 10:30 in Gainesville, Florida. David was planning to study engineering at Caltech, and his presence will be missed throughout the campus.

## Prof. Don Anderson Proposes New Earth Formation Theory

While there was concern about the volcanic eruptions of Mt. St. Helens, Prof. Don Anderson was analyzing the consequences of an ocean of magma covering the earth. Fear not however, for he was researching the early formation of the earth 4.5 to 3.8 billion years ago.

The basic difference between Anderson's theory and the conventional theory of mantle formation of the ancient earth is the differentiation of the added substances

(materials). The conventional theory states that the earth's gravity attracted other objects orbiting about the sun, and caused them to fall to the earth. This process is known as accretion. If the meteorites which collided with the earth did not melt, as this theory assumes, the relative distribution of minerals would be uniform throughout the earth. Because of new experimental

continued  
on page 4

Up From the Well

I would like to ramble today about Caltech life in general. I had occasion to live in one of the student houses over the summer and observe how things function in the absence of the majority of the students. First, I've got to say that I won't do it again if at all possible. (The following remarks are not intended to slight any of the other summer residents.)

I happen to enjoy being at Tech. I don't think this is in itself a major indication of severe mindfuck, although there are differing opinions. In fact, I consider myself rather privileged to live in the close company of what I believe to be the most sensitive and intelligent community around. I am often shocked when I am forcibly yanked out of this somewhat sheltered environment and thrust abruptly into the real world—shocked by the lack of caring, understanding, and above all, trust. It takes several experiences in the 'real' world, after being acclimated to Tech life, to learn how *not to trust people* as completely and unreservedly as I, or anyone else, does as a matter of course each and every day. I like to trust people; it makes life a lot easier in general. (If necessary, I can get as paranoid as the next person—but it plays hell with my mind.)

I don't think I'm totally alone in my opinions. I've talked to many people who are similarly faced with the 'real' world from time to time and are often jolted in one fashion or another. Clearly, there is something wrong somewhere—either the world

in general is emotionally mangling and mangled, or Tech is turning us into gullible, easily-hurt people. (If the latter, don't tell me, 'cause I don't wanna know.) I suggest that either the great minds here at Tech work on altering the 'real' world to a Tech-like structure, or else that a course be offered (Psy 0abc?) in teaching those of us who are about to leave this place how to cope in what I think is a far less-perfectly functioning world.

—the realist

**YOUTHGRANTS NOW AVAILABLE**

The Youthgrants program of the National Endowment for the Humanities will offer over 100 cash awards across the nation this fall to young people in their teens and early twenties, including many college and university students, to pursue non-credit, out-of-classroom projects in the humanities. The deadline for submission of completed applications is November 15, 1980.

The grants, which offer up to \$2,500 to individuals and up to \$10,000 for groups (\$15,000 for certain high-cost media projects) are intended primarily for those between the ages of 15 to 25 who have a ways to go before completing academic or professional training.

If you are interested in the program, a copy of the guidelines should be on file at the campus Placement Office or the Office of Contracts and Grants.

# Caltech Coffee House Opens Saturday October 11th at 8 PM

## Scholarships

**Swedish Club Scholarship**  
Swedish Club of Los Angeles, Inc. is sponsoring scholarships for the academic year, 1980-81, for full-time students of Swedish ancestry. The deadline is November 1, 1980, and further information may be obtained in the Office of Financial Aid, 208 Dabney.

**Watson Fellowships**  
Seniors: the deadline for Watson Fellowship essays is October 24. Seniors wishing to apply for these travelling fellowships should come to the Deans Office and talk to David Wales or Chris Wood about their plans.

The California Tech  
Friday, October 10, 1980  
Volume LXXXII Number 3  
Published weekly except during examination and vacation periods by the Associated Students of the California Institute of Technology, Inc. The opinions expressed in all articles are strictly those of the authors and do not necessarily reflect those of the editors or of the **Tech**. ©1980 by the Associated Students of the California Institute of Technology, Inc.

**Editor-in-Chief**  
Stuart Goodnick

**Associate Editors**  
Oliver Graves  
Alan Loh  
David Younge

**Staff Liaison**  
Grover

**Writers**  
Mignon Belongie, Dwain David, Margie Farrell, Les Grate, Lisa Grenier, Peter Grieve, Charles Hershey, Muhammad Khan, John Krehbiel, David LePoire, Doug MacKenzie, Jim Mayhew, Chuck Nichols, Richard Pogge, Steve Rabin, Lee Sunderlin, Mike Walsh

**Cartoonist**  
Luke Will

**Photographers**  
Ken Gant, Bob Goodrich, Ollie Graves, Grover, Paul Ste. Marie, Steve Swanson

**Production**  
Nick Smith

**Business Manager**  
Gavin Claypool

**Circulation Manager**  
Mikey Thien

The California Tech publications offices are located in rooms 115 and 107 in Winnett Student Center on the Caltech Campus. The address is 107-51, California Institute of Technology, Pasadena, California 91125. Telephone: (213) 795-6811, Editors - ext. 2153, Business Manager - ext. 2154. Printed by News-Type Service, Glendale, California. Postage paid at Pasadena, California.

**Subscriptions**  
\$2.00 per term  
\$5.00 per year  
\$100 for life ISSN 0008-1582

**IMMIGRATION ATTORNEY**

**STUART I. FOLINSKY**

2459 Mission Road  
San Marino  
Phone: 799-0651

L.A. Office:  
386-8540

**THE CALTECH Y . . . . . fly-by**

Today, Friday, October 10: NOON CONCERT on the Quad. Sex, drugs, and Rock 'n' Roll. . . one of these three will be the theme of today's noon concert with the "Twisters." Bring your lunch and participate!

Today, Friday, October 10: "Sign-up" for the Colorado River Trip closes at 5 P.M. Winners of the lottery will be posted on The Caltech Y window at 5:05 P.M.

Wednesday, October 15: "An Evening with Larry Niven." Come to Baxter Lecture Hall at 8 P.M. and enjoy the perspectives and wit of the author of *Ringworld*, *Neutron Star*, *The Ringworld Engineers*, *Lucifer's Hammer* (with Jerry Pournelle), and other well-known science-fiction books.

Friday, October 17: To jazz up your day, another NOON CONCERT with the Pasadena Art Ensemble. On the quad for lunch—be there or don't (arranged for your listening pleasure by P. Pat Productions).

Friday, October 17: At 2 P.M., an Open Discussion in Winnett Lounge with Dr. Philip Zimbardo, Professor of Psychology at Stanford University.

**C.I.A.**  
AN EQUAL OPPORTUNITY EMPLOYER

Now is the time to consider  
June employment opportunities

CAREER OPPORTUNITIES  
WITH THE  
CENTRAL INTELLIGENCE AGENCY

The Central Intelligence Agency has professional opportunities for persons trained in the disciplines listed below. If you are a senior or graduate student now completing your studies, we will be pleased to review your credentials.

- Aeronautical Engineering
- Electrical Engineering
- Electronic Engineering
- Nuclear Engineering
- Aerospace Engineering
- Optical Engineering
- International Relations
- Information Science
- Computer Science
- Mathematics
- Economics
- Physics

All initial assignments are in the Washington, D.C. area. Some require foreign travel. U.S. citizenship required.

Get an application form from the PLACEMENT CENTER, Room 10, Dabney Hall. MAIL IT NOW!! Qualified applications will be contacted to arrange an off-campus interview.

MAIL YOUR RESUME OR APPLICATION FORM TO:



CENTRAL INTELLIGENCE AGENCY  
L. L. CURRAN  
P.O. BOX 669  
LAWNDALE, CA 90260



**CHERCHEZ  
LA  
FEMME**

When I got to Caltech I wanted to have tons of fun. I tried playing chess and bridge. I tried drinking beer and shooting the "bull". I even sat around comparing SAT scores with other frosh. Now you already know how much fun those things are. Even so, I would lie awake, dreaming of transcendental fun, of exponential fun, of fun exotic and fun sublime. I knew I'd have to try something different, even a little crazy, to wile away the unfun hours of the day. I resolved that night to lead the perfect chase.

I like girls. I especially like chasing girls. Now some girls hate to be chased. Some girls like to be chased. Some girls love to be chased but act like they hate it unless you stop. If you're really lucky you might even find a girl who'll chase you back. Unfortunately, I'd never been that lucky. I'd never found the right girl. I came to Caltech knowing it was futile.

It couldn't be just any girl, of course. I wouldn't want her to just fall in love, for instance. There's no adventure

there. And she had to be cuter than me, and she had to be funnier than me. She'd have to be worth chasing, and know it and love it. I knew, of course, I'd never find such a girl. But the chase, ah! If I could only find someone who enjoyed being chased as much as I enjoyed chasing them, life would be wonderful.

Someone once told me life wasn't supposed to be wonderful. It was just supposed to be gotten on with. Caltech is good for helping you get on with life. I always secretly hoped there was something else though, a little mystery, a little magic. What does Caltech say? No magic. Period. Sorry. Right up there on the board, first class of Physics 1: NO MAGIC. A little too much mystery for comfort maybe. Mysteries, always disturbing neat theories. You'd think they'd have the decency to leave us scientists alone here in the great dry desert of facts. But no. They hide in the cracks at Physics 1 lectures. They hide between the lines in textbooks. They creep into every experiment. And, I

thought, someday maybe one would wander into my life.

And what I found out was that Caltech was the perfect place to find my kind of girl. They're all cuter and funnier than I am. They're all at least passably fond of nerds. And most important, they all seem to love attention. Caltech, land without magic, turned out to be a chaser's paradise.

Once you've found a girl to chase, what happens next? Proper chasing's an art, you can be sure. Too heavy a touch, they get disgusted. Too light, they think you're not really interested. It's best to get her talking a while to find out where she stands. Find out what she wants from life. Convince her you've got it, then get coy and pretend you don't. Or act tough with her. Just when she starts getting worried, pretend you're really embarrassed and tell her you never act that way. Then do it again accidentally.

Once you've got her attention the chase begins in earnest. Ever watch a good fisherman? He lets out a lot of line every now and then. The fish digs it. But the hook is in. Don't let her know whether you're interested. Chase her all over campus one week, then ignore her the next. Or barge in on her when she's talking to some other guys, then act real

shy when they leave, and wander away. Remember the chaser's creed: Chase her when she's not looking, act uninterested when she is.

The trick is to get her wondering about you. That's where the real fun lies. It's easy to tell, too. She'll say something like "Hey, do you understand simple harmonic motion?" There's a temptation to follow her up to her room and help her with her biology. Don't fall for it. From then on you'll have to play her game, which won't be nearly as fun as yours. Be aloof and mysterious. Think Humphrey Bogart thoughts. Let her tell you about simple harmonic motion. Interrupt her often enough that she can't concentrate on her problem. Then suggest it's time to talk about her. Make like you're about to reveal your true identity now and again, then change the subject back to her. At all costs, keep her wondering. She'll never stop the chase if she doesn't understand what you're up to.

Just one final word about chasing. It's not for everybody. Some people always seem to get caught, for example. Other folks would rather study and die of terminal seriousness. If you aren't sure where your sympathies lie, try this simple test. For one week, lurk,

skulk, and sneak whenever possible. Pick out a quarry and keep your eye on her. Just before bed each night, practice looking sly in the mirror for ten minutes. If this little exercise doesn't get your juices flowing, there's no hope for you. Just go back to your room and troll.

Me? I've got my quarry staked out. I don't think she suspects yet. It's only the second week of school, after all. Anyway, you'll have to excuse me now. I still need a little work on my lascivious leer.

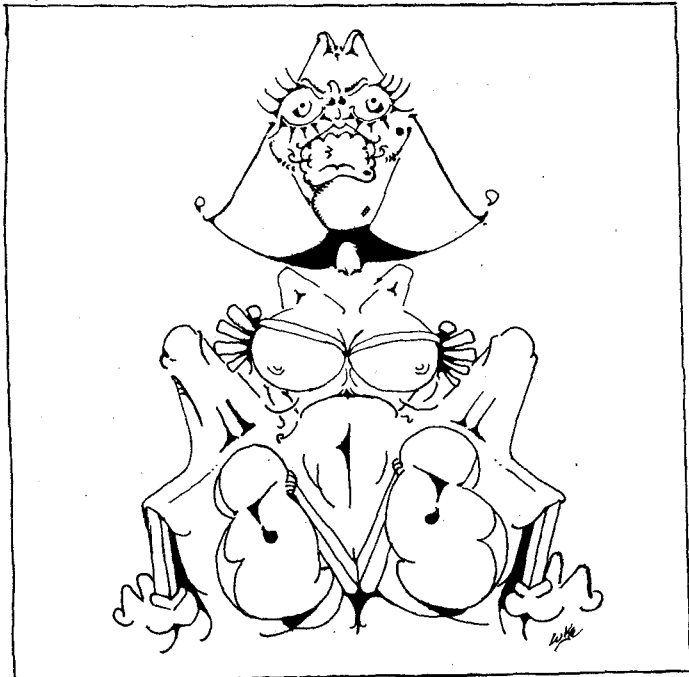
-Chuck Nichols

**ANY SAILORS  
OUT THERE?**

Any members of last year's sailing team or new people interested in getting a team going this year, please contact Mark Maier at 578-9886 in Ruddock House.

**ADCOMM**

The IHC will appoint a student representative for Upperclass Admissions to the Faculty/Student Committee. A sign-up sheet will remain posted at 105 Winnett until October 17. Interviews will be held the following week.



"TELL ME AGAIN THAT YOU LOVE ME, PINOCCHIO."

## Dr. Paul Mac Cready

pioneering aero-nautical scientist designer  
of the solar power. GOSSAMER PENGUIN  
and the SOLAR CHALLENGER.  
A film-lecture presentation:

### Solar Powered Flight Tuesday October 14 8:00 p.m.

Ambassador Auditorium  
300 W. Green, Pasadena, CA.  
Tickets Chargeline 577-5511

**THE SEQUOYAH SCHOOL** in cooperation with Ambassador College

**Buy Caltech Cards  
and save 20%**

**CALTECH'S**

**Buy Caltech Cards  
and save 20%**

**BURGER CONTINENTAL**

**will offer you a deal you cannot refuse.**

**good food at reasonable prices  
refills on soft drinks at all times  
seconds on salad bar**

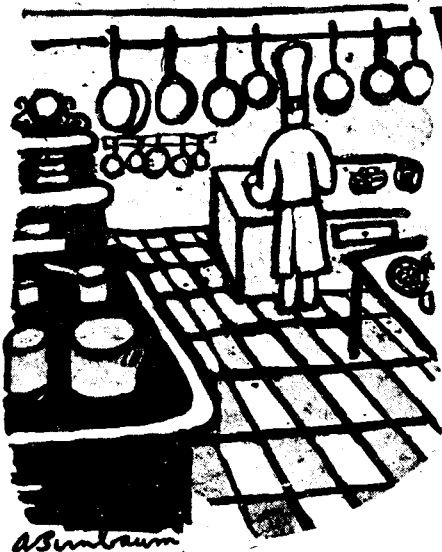
**SPECIALTIES: SHISH-KABOB, SHAORMA, SOUVLAKI-STEAK  
HOMEMADE PASTRIES: BAKLAVA, BURMA, AND NAPOLEONS**

**For Entire Month of October:  
A Free Root Beer Float to All Seniors**

**Faculty, Grad Students, Attend!**

**Mondays and Tuesdays are Beer Days. Buy 1 pitcher, get the second one free!**

**On Lake Avenue  
1/2 Block North of California**



A. S. Berman

# I Left My Fault Earth In San Francisco

Caltech researchers, using new mathematical techniques and resurrected antique seismic instruments, have gained new insight into the 1906 San Francisco earthquake.

Paul C. Jennings, professor of civil engineering and applied mechanics, and Hiroo Kanamori, professor of geophysics, have derived for the first time a local magnitude ( $M_L$ ) of 6.9 for the quake. This contrasts with 8.25, the surface wave magnitude ( $M_S$ ) that the temblor is traditionally assigned.

The surface wave magnitude measures the overall size of the quake, including the length of faulting, but doesn't necessarily indicate the strength of ground shaking near the fault. On the other hand, the local magnitude measures the size of an earthquake in a range of vibration highly damaging to structures, and thus is of particular importance to earthquake engineers.

The local magnitude hadn't previously been determined for the 1906 quake because of the lack of appropriate seismic records, and thus seismologists didn't know how the temblor compared with more recent quakes in strength of ground shaking. The newly obtained value, 6.9, is approximately comparable to many recent large earthquakes in California (for example: the San Fernando earthquake, 6.3 to 6.4; the 1968 Borrego Mountain earthquake, 6.4 to 6.9; the 1953 Kern County earthquake, 7.2).

These figures indicate that the 1906 San Francisco quake is comparable to these temblors in strength of ground shaking near the fault, although the area affected was much larger because of its extensive fault length.

The Richter, or local magnitude, scale that usually is used in reporting magnitudes of California temblors was devised in 1935 for southern California by Charles F. Richter, now Caltech professor of seismology, emeritus. Dr. Richter and Caltech seismologist Beno Gutenberg later extended the scale to worldwide earthquakes. The scale has since gained wide acceptance and is currently the most commonly used measure of earthquake size.

However, Richter's original concept was elaborated upon, so that several types of magnitude scales, such as the surface-wave magnitude scale, are now in existence. These scales provide earthquake specialists with a more complex variety of information about the different types of ground motions produced by a specific quake than is available from the original Richter local magnitude scale.

To reach their estimate, Jennings and Kanamori developed a new mathematical formula for interpreting old seismoscope records of the quake. The formula enables experts to derive the local magnitudes of temblors from the records of seismoscopes—instruments

designed to yield a different type of information about ground wave motions than that given by today's seismograph readings.

Their method of calculation should prove particularly important in determining the local magnitude of large earthquakes, because the more sensitive seismographs near an earthquake epicenter are generally thrown off-scale by very large temblors.

The two professors also have devised a technique to determine the local magnitude of a quake from the recordings of strong-motion accelerograms—other instruments used to record data about seismic waves produced by earthquakes.

from one evidence, Prof. Anderson challenges the conventional theory. He theorizes that the mantle was melted by radioactive decay, and subjected to processing by chemical action and gravitation. The mantle was then differentiated into layers of different chemical makeup.

The evidence, accumulated over a decade, was found in mantle materials deposited on the surface of the earth. The level of trace elements was found to be different in two different sources of mantle material; the spreading ocean floor and the "hot spots" of continental crusts (e.g. Yellowstone Park volcanoes). These two different sources originate at different depths in the mantle. Hence, the evidence supports the theory of the differentiation of the man-

tle. Seismic studies also indicate that there is a layering of the mantle.

Other familiar objects in the solar system, have undergone similar melt processes. It has been shown that the moon was once an ocean of molten magma that subsequently solidified into chemically differentiated layers. The planet Venus is believed to be in its "magma" stage. The surface temperature on Venus is so hot that the crust does not cool enough to become dense and subsequently sink.

Using the recent mantle data, and analogies to the moon and Venus, Anderson believes that as the earth was forming (about 4½ billion years ago) the accreted materials were melted. The surface temperature of the earth was too high for convection to occur within the mantle, but, as radioactive materials decayed, the heat source diminished leading to a cooling of the surface. Convection started in the upper part of the chemically differentiated

mantle and continental plates were formed.

The theory is being subjected to scientific review, but so far, no major objections have been cited. The basis for the old theory was the equivilant abundance of the trace material, neodymium found in the spreading ocean floor and hot spots. Anderson showed that the evidence was ambiguous because, during melting, certain processes occur between rare earth elements which cause the neodymium level in the melt to be the same as in unmelted. The other trace elements support his theory.

Prof. Anderson is now researching the distribution of lead isotopes in the mantle. Deeper layers of the mantle should contain less lead than those near the surface. The problem with studying a sample which originates in the lower mantle is that it must first pass through the lead enriched layer which causes contamination. Prof. Anderson is analyzing the data with these factors in mind.

## Rewards. Respect. Growth. Sound Management. Credibility. Direction.

Without a doubt, you've heard these words plenty of times. Some people call them "buzz" words because they're supposed to draw your attention.

At Signetics, we do more than simply attract you with impressive sounding words.

We make them come to life.

We're setting the pace for the '80s in the semiconductor industry.

And we offer college graduates challenging career opportunities in a variety of exciting areas, including all phases of engineering: product, design, process, test, reliability/quality assurance, and failure analysis.

We're seeking individuals with a bachelor's, master's or Ph.D. degree in electrical, mechanical or chemical engineering; material science; computer science; physics; metallurgy; electronics or industrial technology.

While most of our openings are of a technical nature, we encourage you to contact us about non-technical opportunities which exist from time to time in Finance, Sales, Administration, Personnel, Material Control, Marketing, Production, and other Support Functions.

**We'll be on campus  
Tuesday, October 14**

Where you start your career is extraordinarily important. Your first job—and what you do with it—will shape your future for years to come. Take time to review the Signetics Recruitment Binder which you will find in your Placement Center. You'll learn

about our opportunities in California, Utah and New Mexico. Or, write to Signetics College Relations, Opportunity CP-80, 811 East Arques Avenue, Sunnyvale, CA 94086. We are an equal opportunity employer. Permanent residency visa preferred.

The Good People Company

**Signetics**

a subsidiary of U.S. Philips Corporation

# Briefs

ALL THE NEWS WORLDWIDE  
HOME-DELIVERED  
LARGEST CLASSIFIED VOLUME  
(213) 970-4986  
NORTHROP AIRCRAFT DIVISION OFFICE

ADVERTISEMENT  
**The World Globe**  
SPANNING THE GLOBE TIMELY REPORTING

IN FOUR PARTS-52 PAGES  
PART I-GENERAL NEWS-15 PAGES

VOL. LIX

DAILY FIVE CENTS

## ON CAMPUS INTERVIEWS October 17

Lost: TI-58 Calculator with master library and statistics modules. Call James, 578-9769, x2698A or leave a message at the Dabney House mail box. **REWARD.**

### NATIONAL HISPANIC SCHOLARSHIP FUND

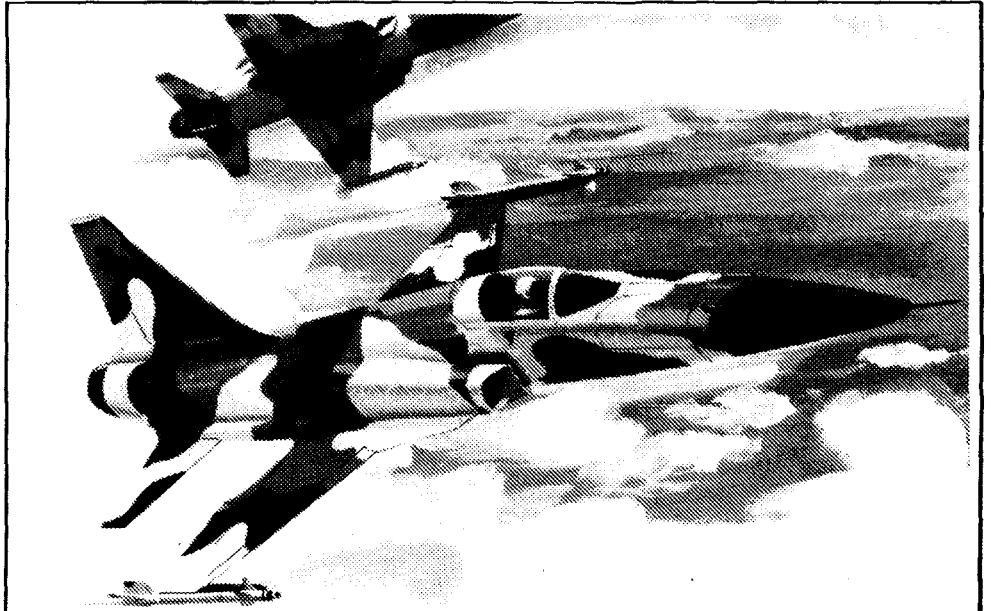
Scholarships are available to graduate and undergraduate students of Hispanic American background from the National Hispanic Scholarship Fund. Applicants must have completed at least two quarters or one semester of college work prior to the submission of their applications. In addition, applicants must be U.S. citizens and presently enrolled as full-time students. Applications may be submitted between August 15 and October 15. Awards will range from \$200 to \$600. Applications are available in the Financial Aid Office, 208 Dabney Hall.

### Newest Northrop Fighter Advances F-5 Family March 24, 1980 - Hawthorne, California

The new generation of Northrop's F-5 family of low cost tactical fighter aircraft, the F-5G, was announced at Hawthorne today, stepping up a nearly 20-year evolutionary program for the company. The single-engined F-5G was conceived to meet world defense needs today and through the 1990's, and offers an affordable, supportable defensive system that keeps pace with the changing requirements for national security.

#### October, 1980

Northrop Aircraft is still designing and building high-performance aircraft today in the company's mile-long, modern complex in Hawthorne, California. For 40 years, we've promoted the people associated with our products and furnished one of the finest benefits packages available in the industry including educational reimbursement for employees in an accredited graduate study program; a convenient savings plan - for every dollar invested, Northrop contributes 50 percent; and generous vacations - including a week long Christmas holiday. In addition to a creative work environment you'll enjoy Southern California's year round recreational paradise. And, Northrop's recreation club sponsors many enjoyable activities such as skiing, golf and fishing.



If your interests are in **AERONAUTICAL, AEROSPACE, MANUFACTURING, MECHANICAL, OR ELECTRICAL ENGINEERING; COMPUTER SCIENCE; MATERIALS SCIENCE; or PHYSICS** see Northrop today for your tomorrow.

representative. If you can not meet with us at this time, please forward your resume to:

**Employment Office  
Zone 80, Dept. TS/CIT  
2815 El Segundo Blvd.  
Hawthorne, CA 90250**

Contact the placement office to schedule an appointment with a Northrop representative.

Equal Opportunity Employer M/F/H

**Aircraft Division**

# NORTHROP

Making advanced technology work.

**THE HAIR CUTTERS**

ME AND MERS  
OPEN EVENINGS

**449-6967 449-1022**

1009 E. COLORADO PASADENA  
NEXT TO THE ACADEMY THEATRE  
PARKING IN REAR

## SPACE FILLER SPACE FILLER



# ENTERTAINMENT

MOVIES plays SPECIAL EVENTS

## "Time Lines" Trace Esthetic Past

By Margie Farrell

What's the weird construction in Dabney Garden? Is it a solar collector or just some of B&G's handiwork? Neither, it's a sculpture by California artist Michael Davis, who talked about his work Tuesday afternoon in Baxter Art Gallery.

The sculpture is called "Time Lines for Forgotten Ancestors" and consists of five large wedge-shaped units, each made of wooden slabs and partially covered with one of these materials: stucco, painted wood, glass, steel, and marble. Davis explained that the piece was inspired by various styles of California architecture through history. He was also inspired by such structures as the Great Wall of China, which has a foundation of wood helping to hold up the stone. Knowing that the work was based on this principle of foundations partly hidden by finishing materials gave it an underlying logic important to being able to understand the art and to not see it as just random and sometimes bizarre combinations of materials.

The first wedge, covered with multi-colored stucco that has pieces of straw and bamboo mixed in, represents American Indian building. The second has thin strips of wood painted in muted and pastel shades nailed to it and represents frame homes.

The next two units symbolize modern architecture. One has railroad ties protruding through the wooden framework and a sheet of tinted plate glass on either side of the wedge. The other has pieces of steel attached.

The glass unit represents skyscrapers and other "uptown" buildings; the steel, warehouses and commercial structures.

The final wedge was the classical style and consisted of irregular slabs of black and white marble attached to the wooden substrate.

Davis emphasized the importance of the setting of the piece, saying that it harmonized with both the eclectic Caltech architecture and the organic surroundings of Dabney Garden. He felt that many nearby elements such as the statue of a Chinese philosopher, the Inca-like tile fountain, and even the olive trees, contributed to the desired effect of a richness of many cultures. He said he intended for the piece, like real architecture, to show the effects of its environment: staining and weathering of the wood by the elements, debris accumulating in the sculpture's hollow spaces.

The scale and positioning of the units are also important. They are about the height of an average person and arranged around the perimeter of a square. This creates an enclosure, a kind of courtyard within a courtyard. The purpose of this layout is to give a closed-in effect and a tension between the space defined by the wedges and the wedges themselves. The set-up is designed to encourage students to walk through the "courtyard" and view the piece from different angles. In scale, the piece is massive but not megalithic or oppressing; it is obvious that it could have been constructed by one person.

Davis also gave a slide show about some of his previous work. He started as a painter but during a time when he was low on money began to make collages of materials he found, such as laminated cardboard, corrugated board, and plate glass. He referred to them as organic landscapes; they were inspired by nocturnal desert scenes and contained a lot of wedge shapes. He considered them unsatisfactory, however, because they were only two-dimensional, and destroyed them.

continued on page 7

## Up Your Genes

By Peter Grieve

Have you ever wondered why you turned out the way you are? A partial answer to this question was given last Wednesday at the first Earnest C. Watson Memorial Lecture of this season.

The title of the lecture was "All You Ever Wanted to Ask About Genes and Chromosomes But Were Afraid We Didn't Know" and it was given by Caltech Professor James Bonner.

Dr. Bonner has been in the Caltech Biology Department since 1929 and so has had first hand experience with many of the major breakthroughs in genetics.

After an introduction by Institute President Marvin Goldberger, Bonner began with a few words about genetics in general. He cited the similarity of separately raised twins in regard to appearance, medical history, and behavior as evidence for the power of the chromosome.

Dr. Bonner then covered the history of our Biology Department from 1910 to 1935. This included the discovery of "crossing over"

(the mechanism whereby a pair of chromosomes exchange information), the creation of the first map of gene sites, and the discovery of easily observed chromosomes in the salivary glands of fruit flies.

After this, Dr. Bonner told of what we now know about DNA and its activities in the cell: replication, transcription, production of enzymes. He also explained the way a chromosome can store a DNA strand 2 centimeters long (Hint: it has something to do with coiling up.)

He then explained the technique of cloning and recombinant DNA, but would not talk about the application of genetic engineering to human beings. "People that do [talk about it] get in trouble," he stated, citing the front page of the October 8 *L.A. Times*.

Titles for future lectures include: "Quasars and Continental Drift," "I California Overdue for a Large Earthquake?" and others. Lectures begin at 8 pm at Beckman Auditorium, and are held on randomly spaced Wednesdays.

## "COSMOS" Myth Exploded

'Letdown' is the best word to describe the second episode of KCET's new series, *Cosmos*. For a program that cost more than \$10 million to make, *Cosmos* was dull and reminded one of a course outline given during the first day of a biology course. That is not to say there weren't portions that were interesting, because there were. But too often, the show took unbearably long to get to the

point. A prime example was the story of the Japanese warriors, which after some time led to the point of artificial selection.

The highlights of the series so far are the special effects along with writer-narrator Carl Sagan. There weren't any spectacular effects as there were in *Star Wars*, but they were new and unusual.

Sagan himself is one of the few elements that keeps the

program tolerable. There has been some criticism of Sagan's diction, but actually his choice of words was more than suitable. And his seemingly genuine interest in the subject he is exploring does generate some excitement in his topic.

Hopefully *Cosmos*, which airs Sunday nights at 8:00 on channel 28 (rebroadcast at 11:00 am on Tuesdays on channel 58), will improve over its next eleven weeks.

—Doug Mackenzie

## ASCIT MOVIE

Friday Night 7:30 & 10:00

ASCIT Members 50¢ Others \$1.00

Baxter Lecture Hall

"MEL BROOKS' COMIC MASTERPIECE"

—Hollis Alpert, SATURDAY REVIEW

YOUNG  
FRANKENSTEIN

Next  
Week

ZARDOZ

COLUMBIA ARTISTS FESTIVALS

presents

## the caribbean carnival of TRINIDAD

starring

Trinidad-Tesoro

Starlift Steel Orchestra

UJAMAA Dancers & Drummers

calypsonians

SINGING FRANCINE

& MIGHTY ROBIN

TWO PERFORMANCES: Fri./Sat., OCT. 10/11 at 8PM

CALTECH'S BECKMAN AUDITORIUM

All Seats Reserved: \$12.50-11.50-10.50

PHONE CHARGE TO VISA & MASTERCARD: 213/793-7043  
(subject to \$1 per order service charge)

Tickets available at all Mutual & TICKETRON agencies, and at Caltech Ticket Office, 332 So. Michigan Avenue, Pasadena. Mail orders: Ticket Office, Caltech (332-92), Pasadena, CA 91125.

CIT/JPL Faculty and Staff receive 10% discount

CIT Students receive 20% discount

\$3 CIT Student rush tickets available today, October 10, 1980

Limit 2 tickets per student

## PIE DIP

- 1 Package Cheese Cake Mix  
 1/2 Tbs. Salt  
 1 Bowl Black Cherries  
 2 Cups Grahamcracker crumbs  
 1/4 Cup crushed potato chips  
 3 Tbsp. Onion Dip

Make Cheese Cake according to directions on box in a large mixing bowl, add cherries, chips, dip and crumbs. Mix to a smooth blend and heat. After heating, cool in freezer. Serve cold.

## Time Line

### from six

He began making three-dimensional "wedge cuts" and "hill cuts", inspired by the image of a road cutting through a hill. The implications of the man-nature interaction interested him. He would leave some of these works outside, such as in rivers, for varying lengths of time to see what changes would occur in them. This has been an important part of most of his later art.

Two events helped his work develop his wedge themes. One was living near a harbor, which let him see boat shapes that were almost inverses of his hill shapes, and got him thinking about wedge shapes in general. The other was buying a table saw, which enabled him to build much larger structures. He described some of the influences on his work. Trips to Mexico, where he saw buildings made with any available material, along with an interest in ancient cultures, were important, as was an interest in early science and alchemy. This led him to make a wedge piece of layers of copper, lead, brass, and wood, with plate glass windows at the ends. This work oxidized from the inside and gave the effect of looking at a heavy snowfall.

This changing of the art by nature over a period of time is often used in Davis's work. He puts many pieces outside in fields, deserts, even oceans for up to six months. He claims never to have lost a work by doing this. Sometimes these sculptures become homes for small animals, others are meant to look like boats camouflaged with ocean colors and a false horizon.

Davis has also done large scale outdoor constructions. An example, built on a beach in New York City, was a house composed of two rooms connected by a concrete corridor, with a long entrance hall. The hall's ceiling was wire mesh covered with rocks and leaves to give an impression of being underground. The rooms glowed with green light and had radiation warning signs on the walls. It looked like a bomb shelter and Davis said it represented radiation and the polarities of government and power.

"Time Lines for Forgotten Ancestors" is part of an exhibit called "Architectural Sculpture" with works by more than sixty artists shown in many places throughout Southern California. Next Tuesday at noon in Baxter Art Gallery, artist Jud Fine (creator of the long pipe-like object on the Court of Man) will give a talk.

## Fail & Still Succeed

By Juanito Villanueva

Larry Niven, a favorite author among science fiction buffs, will once again visit the Caltech campus to give an informal evening lecture. He has been invited here on a number of previous occasions, and because of his continued popularity has been invited The Caltech Y to give a presentation on Wednesday, October 15 at 8:00 pm. The stage: Baxter Lecture Hall. The scene: a jovial ensemble of graduates, undergraduates, and real people, being entertained by the wit of well-known science fiction author, Larry Niven.

As we look at Mr. Niven's priorities, we begin to envy

him from the start. Entering Caltech as an undergrad in 1956, he soon had to choose between devoting his life to science fact or to science fiction—he chose science fiction and did not complete his undergraduate studies here. He has written a profuse variety of works, mostly fiction, yet speckled with speculative articles, speeches for high schools and colleges, television scripts, and (with Jerry Pournelle) the last ten minutes of a movie.

Mr. Niven has won a number of awards: Hugo (or Science Fiction Achievement Award) for best short story, 1966, for "Neutron Star," "Forrie" award, 1969, for

service to the science fiction field; Hugo, Best Novel 1970 and Nebula, Best Novel 1970, for *Ringworld*; Hugo, Best Novelet, 1975, for "The Borderland of Sol;" and a list of others.

Larry Niven is also responsible for many more immensely enjoyable works such as: *A Gift From Space*, *All the Myriad Ways*, *Inconstant Moon*, *A World Out of Time*, *A Hole in Space*; and with Jerry Pournelle: *Lucifer's Hammer*, and *The Mote in God's Eye*. Again, the list is long and these are just a few examples.

So on the evening of Wednesday, October 15, if science fact is getting you down do what Larry Niven did—turn to science fiction! He will be there to tell you all about "the other side of science." Remember: 8:00 pm, in Baxter Lecture Hall.

## WILD LIFE

British naturalist-author Gerald Durrell will open the 1980-81 Leakey Lecture Series at Caltech's Beckman Auditorium on October 28 at 8 pm.

Most of us know that a few important animal species are endangered but few realize that literally hundreds of animals, birds, and reptiles are now on the brink of extinction.

On a manor house lawn in Trinity's Isle of Jersey, a colony of gorillas and 700 assorted other animals freely romp. The place is the Jersey

continued  
on page 8

Is **NOSC**  
in your future?



Research and development in

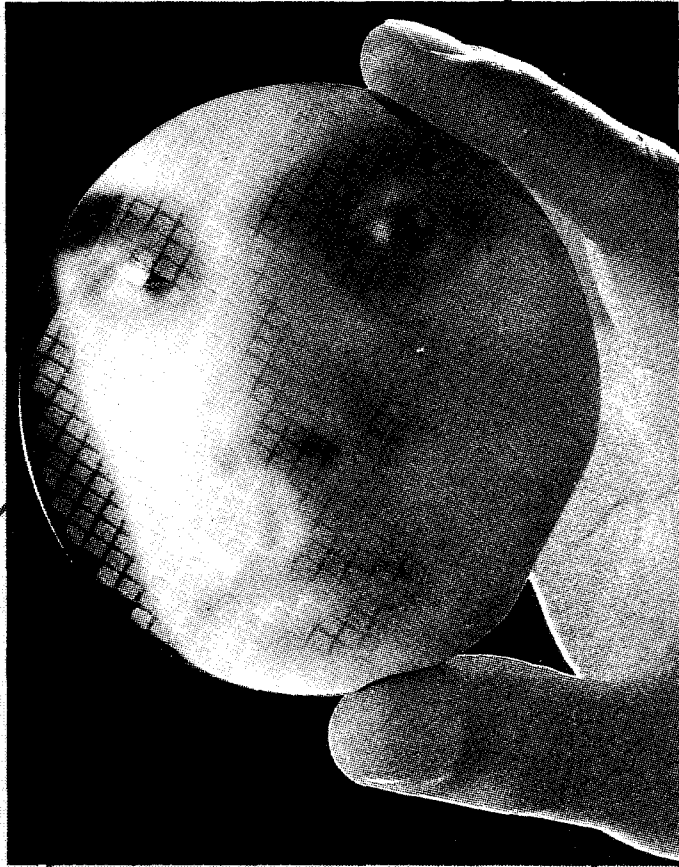
- \* electronics
- \* computer science
- \* mechanical engineering
- \* physics
- \* mathematics

See our representative for an on campus  
interview **Thursday, October 16**

NAVAL OCEAN SYSTEMS CENTER - SAN DIEGO, CALIFORNIA



U.S. citizenship required • An equal opportunity employer • Federal Civil Service



## **Future technology begins here.**

The semiconductor industry is the heart of a technological revolution that promises fundamental changes in the way we will all work and live. We at Fairchild are committed to a leadership position in the development of products and processes that will make that promise a reality.

We offer outstanding career opportunities for technically-degreed people in both our Semiconductor and Automatic Test Equipment product groups. For specific information, please contact your placement office or write: Fairchild Camera & Instrument Corporation, College Relations, MS 7-100, 464 Ellis Street, Mountain View, CA 94042.

**FAIRCHILD**

A Schlumberger Company

Fairchild is proud of its record as an affirmative action employer and we encourage women, members of minority groups and handicapped to apply.

# ***On-Campus Interviews: October 20, 1980***



# Wild Life

from seven Wildlife Preservation Trust, where Gerald Durrell passionately endeavors to save endangered species by breeding them in captivity. Recent projects at the Manor Zoo include research into breeding techniques, including artificial in-  
 emination.

In his film, "The Edge of Extinction," Durrell explains the need of man's care and help for hundreds of endangered species and why their survival matters to us all.

Ensnuing Leakey Lectures will be talks by Tepilit Ole Saitoti on November 18, Thor Heyerdahl on February 3,

Mary D. Leakey on March 31, Donald C. Johanson on April 14 and Roger Payne on May 26, 1981.

On May 2 there will be a special attraction outside the series. Jane Goodall, Dian Fossey and Birute Galdikas (with Donald Johanson as moderator) will discuss and debate "Man and Ape."

Admission prices: single lectures \$6.50; students \$5.50. Six-lecture series: \$33.00; students \$30.00. "Man and Ape" panel discussion: \$12.50; students \$10.00. NOTE: for each series ticket purchased, one may be bought for "Man and Ape" at the subscribers' rate of \$11; student series ticket holders—\$9.00. For further information phone 794-7043.

# Theresa Hits the SAC

By Tracy T. Furutamin

Though Caltech is not a very complexly structured or large college, the number of campus organizations and clubs it now contains serves to confuse unwary neophytes. Hence, the office of the Coordinator of Student Activities (SAC) was set up to alleviate this problem, and, as is the case with such offices, its tasks grew with the years.

This year, the job fell to none other than Theresa Callahan Meisling, the Resident Associate of Fleming House. Theresa, a graduate of UCLA with degrees in English and Medieval Latin, came to Caltech with her husband,

Kris. In 1979, they became the Fleming RA's, and Theresa has enjoyed working with students ever since.

As SAC, Theresa assigns the various rooms of Winnett Student Center to clubs who need the space. This also entails the maintenance of these rooms; alerting Physical Plant to repair damages, accepting reservations on the rooms and erasing evidence of ruckus. She also dispenses information about the many and varied activities and clubs on campus with the help of her voluminous files and she works closely with the Dean's office, distributing "literature" to new

students and the like.

She also gives comfort in trying times, such as feeding starving undergrads with her coffers of coffee, tea and chicken soup, and providing recreational aid. In other words, if you want to gain entrance to the Game Room, such as it is, Theresa is the one to see.

Finally, she answers phones, attends ASCIT BOD meetings and does "all the little things that have to be done." Her office can be found in 105 Winnett Center, across from the Tech Office, and is open from 10 am to 4 pm weekdays.



## Classified Ads

### FOR RENT

Comfortable, clean one-bedroom. Quiet area. Rent \$245.00 + s/d. Call 355-3571 for appointment. 770 E. Washington #5 (near Lake). No stove/refrigerator. Apartment has CARPORT, no air conditioning.

### FOR SALE

CONTACT LENS WEARERS. Save on brand name hard or soft lens supplies. Send for free illustrated catalog. Contact Lens Supplies, Box 7453, Phoenix, Arizona 85011.

GENE RUBIN AUDIO. We carry only those products which provide highest quality and value. We feature: PS Audio, Thiel, NAD, 3D Acoustics, Chartwell LS3/5A, Spendor, Cizek, Spica, VPI, Connoisseur, KM Labs, Dynavector, Grace, LAST, Live Wire, Platter Matter, and more. M/C & VISA. (213) 571-1299.

### SERVICES

PROFESSIONAL TYPING by executive secretary. IBM Selectric. Resumes, theses, reports, MSS. Grammar, spelling corrected. Fast, dependable, conscientious. Call 257-4300.

### HELP WANTED

Babysitting in my home. Mon-Fri, 12:30-5:30. 1 child (9 mos). Must have trans. to Hastings Ranch area. Sdnt wife, grad sdnt welcome. Exp. and refs req'd. Pay commensurate w/ quals. 351-9346.

NEED DRIVER to transport private car to Seattle. Call 796-3350 for details.

TECHER SKILLED in carpentry or home construction needed quickly for small projects in Tech office. Leave note for business manager or call x2154.

### OPPORTUNITIES

WE NEED YOUR HELP. Learn to earn up to \$500 per thousand stuffing envelopes. We show you how. Details: send 25¢ and SASE to: GELD, P.O. Box 2124, Yorba Linda CA 92686. (Please mark envelope with "G/6".)

ADDRESSERS wanted immediately! Work at home — no experience necessary — excellent pay. Write National Service, 9041 Mansfield, Suite 2004, Shreveport LA 71118.

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. O.K.?

# A GOOD MAN IS HARD TO FIND

By Eddie Green

Moderato

Verse

My heart's sad and I am all for - lorn, -  
 Yes - ter - day my heart from care was free, -  
 My man's treat - i  
 I sang all

Chorus

hap - pi - ness, it nev - er lasts a day;  
 tried my best to treat him nice and kind,  
 I re - gret the day that I was born -  
 Now the blues have ov - er - tak - en me, -  
 And that man  
 Since my lov -  
 My  
 But

A GOOD MAN IS HARD TO FIND

**T**imes have changed. At GTE Laboratories, we're glad to say we care a lot more about "good" than we care about anything else. We're committed to finding the top professionals in the country, and we couldn't care less about their sex, race, religion, origin—or anything that doesn't affect their performance on the job.

All we seek is excellence. Knowing that's hard to find, we offer rewards to get you to seek us out: variety, challenge, the chance to prove you're one of a kind, excellent rewards and plenty of individual recognition.

As the central facility for GTE R&D, we can back up our promise of the best: working conditions, facilities, and a truly dedicated group of people from management to support staff.

You're hard to find. We're looking harder than most people, and we're sure you'll be glad you found us.

OPTICAL FIBERS • TELECOMMUNICATIONS • COMMUNICATIONS NETWORK ARCHITECTURE • CAD/CAM • SEMICONDUCTOR DEVICES • VIDEO SYSTEMS • SATELLITE COMMUNICATIONS • LSI CIRCUITS • SOFTWARE ENGINEERING

See your Placement Office to set up an on-campus interview, or contact Ken Keeler, Dept. C, GTE Laboratories, Inc., 40 Sylvan Road, Waltham, MA 02154. GTE is an equal opportunity, affirmative action employer.

GTE Laboratories  
 will be at  
 CALTECH  
 on  
 October 23, 1980

**GTE LABORATORIES**  
INCORPORATED

"Looking for You Everywhere"

\*1977, 1978 EDWIN H. MORRIS & COMPANY, Inc.  
 A Division of MPL Communications, Inc.  
 \*Renewed 1979, 1980 EDWIN H. MORRIS & COMPANY, Inc.  
 A Division of MPL Communications, Inc.  
 International Copyright Secured. All Rights Reserved.  
 Used by Permission

# MORE SPORTS THAN YOU WANT

## Coach Parker Is A New Breed

By Lisa Grenier

Forget your stereotype of football coaches as callous, sub-verbal drill sergeants—Caltech's new football coach, Lin Parker, is friendly and articulate. Although he has previously coached only high school football players, he has adapted readily to the advantages and limitations of Caltech students.

Parker assesses the average athletic skill of the football team as being about equal with that of a team at a small high school, but the greater maturity and aptitude for learning which Caltech students possess enables them to consistently progress towards higher levels of athletic capability. His acknowledgement and acceptance of the fact that Caltech assigns a high priority to academics and a low priority to athletics leads to a relaxed atmosphere in which the students can improve athletic skills while maintaining a friendly relationship with Parker, based on mutual respect and admiration. To improve playing skills Parker concentrates on football fundamentals in practices and ensures that all members of the team play in games. Part of his success in relating to the students may be helped by his unusual (for a college football coach) belief that "college football was meant to be played as a game by ordinary students in their spare time and for their own enjoyment." Parker also feels that his job is one of teaching people rather than teaching football, which is a philosophy that makes him regard an athlete's personal growth more importantly than

the number of games won. So when you go to a Caltech football game this year, you will see good football from the improving Caltech team, but you will not see a Woody Hayes type of temper tantrum from Coach Parker.

## Another Fan

To the Editors:

Caltech has a first-rate coach in Linn Parker. His thoughtful, low-key approach to football is in marked contrast to last year's freneticism and "do or die" attitude. With 29 players suited up on Saturday, plus Bill Crowe who took a knee shot, we have the largest squad going into the next game that we have had for years. This allows frequent substitutions and less chance of injury to tired players.

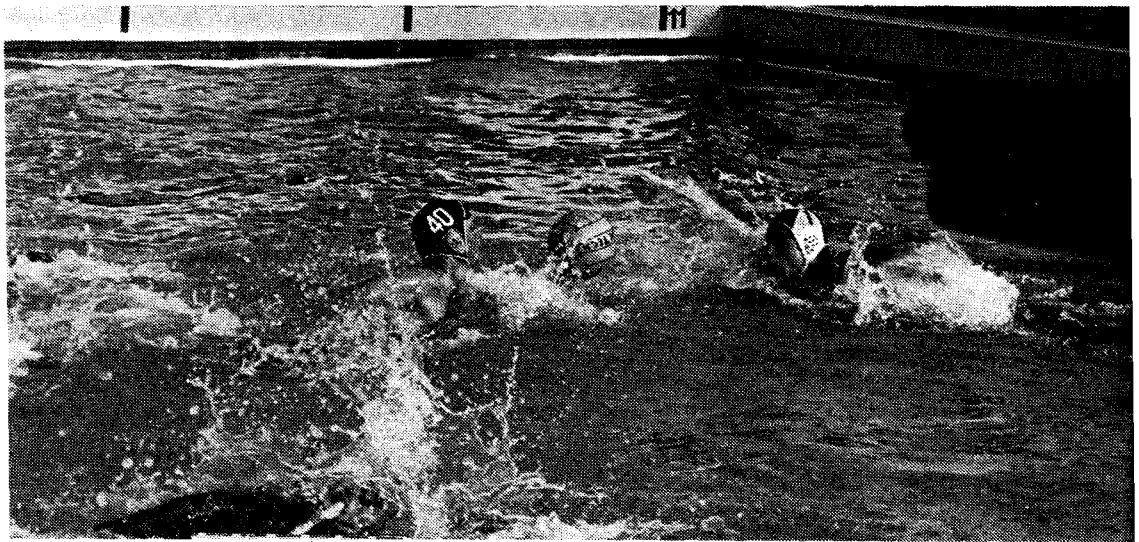
Parker is proof that football at Caltech can be fun and that players can get to dinner on time!

—Ned Munger

## More Football

By Lee Sunderlin

Caltech's football team, outmanned and out-trained, collapsed in the second half against the Pomona-Pitzer JV



The swimming Beavers pulled a 7 - 5 win over the withered Alumni last Saturday.

Sage Hens. Caltech, however, won the battle for the least ludicrous name.

In the words of guard Charlie O'Neil, "We were going to play hard until we died. We just died." Caltech was exhausted in the second half, when the Fighting Sage Hens scored 34 points to Tech's 29 yards.

The game was not without its good points, however. Tim Brazy, with 18 tackles, played an outstanding game. Running back Dan Pernich, who gained 79 yards on 15 carries, supplied much of the offense for the Beavers.

Caltech quarterback Terry Thomason completed 6 of 15 passes for 50 yards and was intercepted twice. P-P's passing attack was also slowed, with only 6 of 14 passes completed for 90 yards.

Pomona didn't need to pass. They dominated the ball with 48 running plays to Caltech's 26, and a staggering 381 yards to the Beavers' 83.

Heavy smog, heat, lack of conditioning, and a lack of players that forced 7 people to play both offense and defense were the main reason for Caltech's downfall. Caltech

played almost even throughout the first half, but got progressively worse as the Sage Hens pecked out 14 points in the third quarter and 20 in the fourth.

The crowd of about 75 continued to support the team through the entire game (mostly). The cheerleaders, suffering like the team from lack of practice, did surprisingly well in support of a losing cause.

Caltech plays La Verne here next Friday at 3:00 pm.

the Beavers will face this year. Cameron also stated that the Caltech team this year probably better than any Tech team of the past decade, but the other teams in the league have also improved greatly.

The Beavers now post a 0-4-1 record. The only tie came against LaVerne, Oct. 2nd. Tech jumped out to a 2-0 lead at halftime on goals by Freshman Tom Remmers and Junior Lance Dixon. Dixon's goal came after a Nick Gross shot hit the cross bar.

LaVerne tied the game in the second half forcing a overtime. Gross scored early but put Tech out front but LaVerne managed to tie the game with less than one minute remaining in overtime.

The soccer team is larger and more experienced than has been in recent years. A but one starter from last year returns to this year's team!

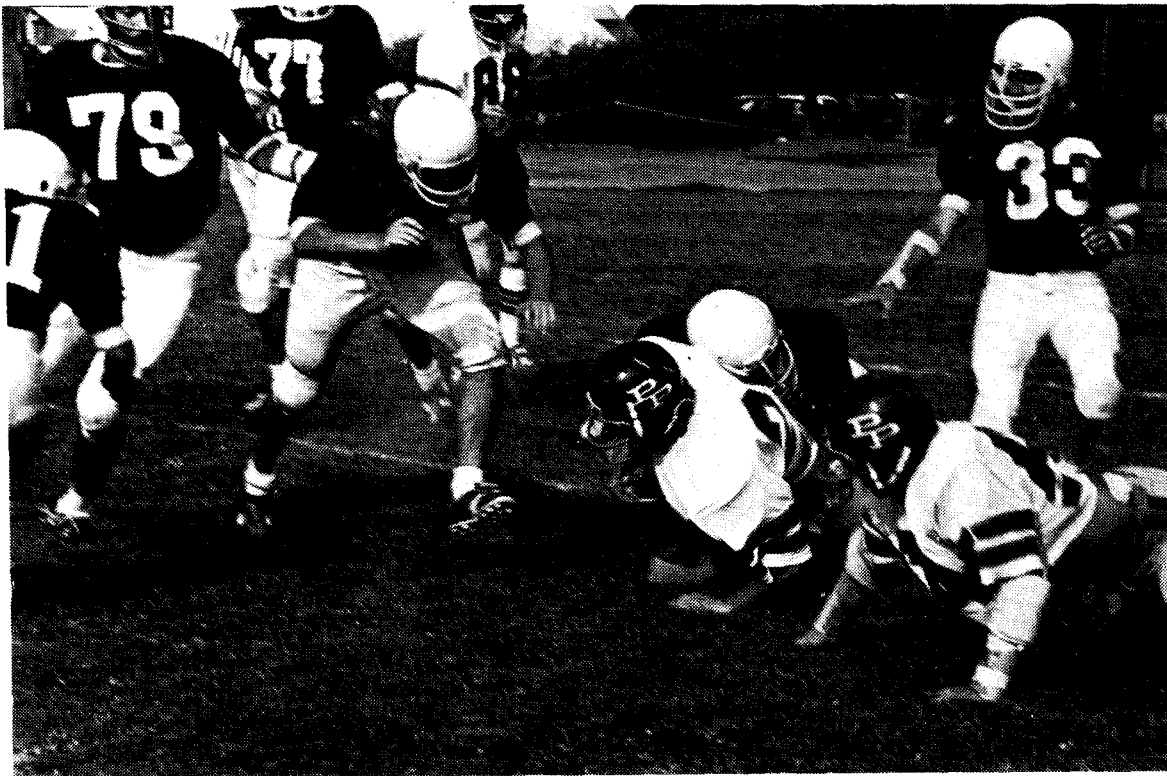
Dixon, Remmers, Ross, Andre, and Brad Axan are vying for three forward positions. Returners John McNally (who likes the color pink—eds.), Nick Gross, Russell Quong and Freshman John Krehbiel all see time **continued on page 10**

## Soccer Kicks

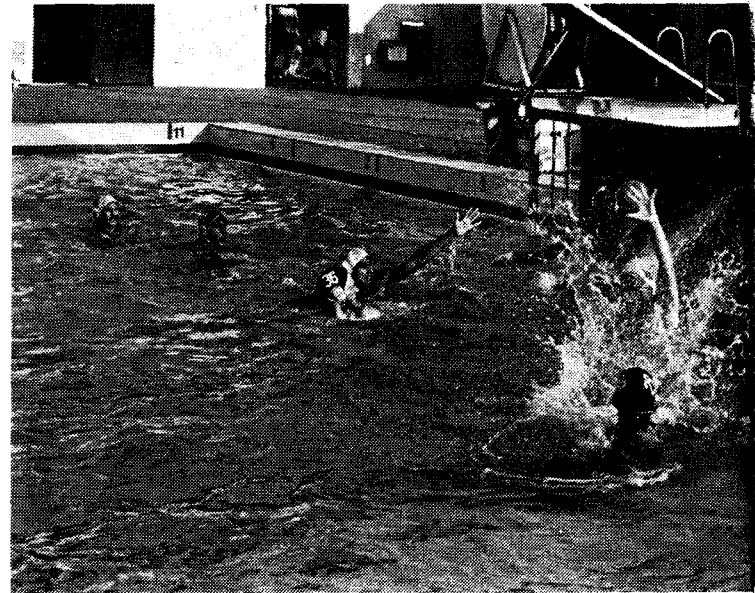
By Jake

Caltech's undergraduate soccer team dropped their league opener 10-0 last Saturday at Pomona-Pitzer.

Returning Caltech coach Don Cameron was not upset at the loss stating that Pomona-Pitzer was easily the best team



Caltech came close to vanquishing their hated rivals of Pomona last Saturday. Fiercer than ever, the Beavers plan to chew La Verne today at 3PM at Caltech.



**Marshall Scholarship** applications are now available for 1981. Marshall Scholarships are open to all U.S. citizens, and are used for up to two years of study at any British university. Selection is based on academic achievement, strength in major field course-work, other

activities and achievements, and letters of academic or personal reference. The deadline for application for the 1981-1982 scholarships is October 22, 1980. Further information may be obtained from the Office of Financial Aid, 208 Dabney Hall.

from nine

halfback. The fullbacks are Brian Dunkeld, Terence Barr, Larry Fridrich, John King, Greg Houseman, and Luis Monsalve.

Although last year's team had problems scoring, this year's team is having more problems keeping the other team from scoring. After four games Tech has scored 14 goals to their opponents 31. Coach Cameron has been changing between Sophomore Chuck Lindsey and Freshman Doug Sdore in the goal.

Preliminary predictions have the Beavers finishing fifth in the league this year, very respectable for the league's smallest college.



# Slapstick, Slide Rule

By Mignon Belongie

*e to the u du dx, e to the x dx!  
Cosine! Tangent! Secant! Sine!  
Three point one four one five nine  
Square root, integral, u dv,  
Slipstick, slide rule, C.I.T.!!*

*C.I.T. Rah! Rah! Rah!*

*C.I.T. Rah! Rah! Rah!*

*C.I.T. Rah! Rah! Rah!  
Technology! Technology!  
Technology!*

That's right, believe it or not, Caltech actually has

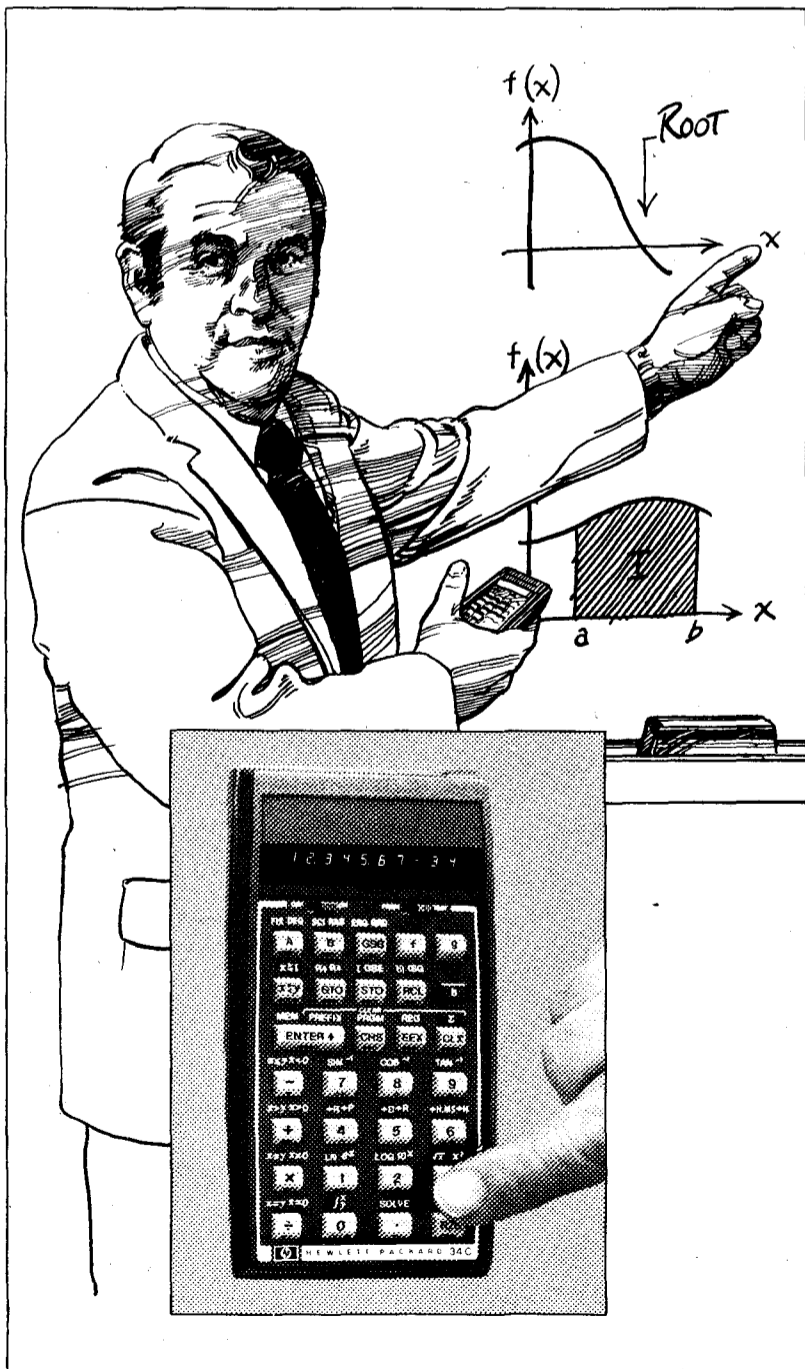
cheerleaders! There are 12 cheerleaders, and we cheer for both the football and the basketball team. (Yes, we have those, too.) The returning cheerleaders are Mara Freeman, Ginny Konikowski, Becky Sheets, Noemi de la Puente, and the head cheerleader, Gloria Badilla. This year's new cheerleaders are Thelma Nunes, Laura Wilson, Clare Waterson, Janet Tamada, Daniela Bonafede, Kathy Sheedy and Mignon Belongie [*Who also works on the Tech eds.*].

Most of the new cheerleaders came a few days early to start practicing. Gloria was already here, and we had about three practices a day, until we left for Frosh Camp. Once school started, we practiced once a day, usually. We cheered for the first time at the football game last Saturday. The Pomona Sagehens beat us 41-0 [*see other article in this issue of the Tech*], and our cheerleading was less than perfect, but we had a lot of fun.

The cheerleaders here at Tech are not terribly serious about cheerleading. We do it mainly because it's something to do to get away from homework. It may seem odd that a bunch of physics and chemistry majors are being cheerleaders, but we really enjoy it.

*Note: The above cheer is originally an M.I.T. cheer which has been borrowed and altered slightly by Caltech.*

## HP Professional Calculators. The HP-34C makes finding roots and solving integrals as easy as adding or subtracting.



The HP-34C's Solve and Integrate functions put an end to laborious computations and the trial-and-error approach for determining the roots of an equation or computing definite integrals of a function. Now, a single keystroke gives you the answer. This means real time-savings for you math, engineering, and science majors who will be performing these calculus operations over and over again.

Solve and Integrate are but two examples of the problem-solving power of the HP-34C advanced programmable. Dynamic memory allocation automatically converts the 21 data registers, as needed, to provide up to 210 program lines. And remembers these allocations so you don't have to. Up to 3 keystroke instructions are automatically merged into one program line expanding memory to make the HP-34C comparable to calculators having as many as 370 program lines. And editing is a snap. The HP-34C's editing keys let you review your programs and insert or delete instructions as needed.

The HP-34C also features Continuous Memory that retains your data and programs even after the calculator has been turned off. Retrieve them as often as needed, without the bother and lost time of reentering.

Visit a Hewlett-Packard dealer now and experience problem-solving made easy with the HP-34C. For the address of your nearest HP dealer, CALL TOLL-FREE 800-547-3400, Department 658M, except from Hawaii or Alaska. In Oregon, call 758-1010. For details write: Hewlett-Packard, 1000 N.E. Circle Blvd., Corvallis, OR 97330, Dept. 658M.



610/07

# This Week In Sports

**Soccer Club:**

Saturday, October 11, 6PM, at Rio Hondo:

Caltech vs. Rio Hondo Academy

**Soccer:**

Saturday, October 11, 10am, at Whittier:

Caltech vs. Whittier

Wednesday, October 15, 3PM, at Loyola:

Caltech vs. Loyola

**Football:**

Today, October 10, 3PM at Caltech:

Caltech vs. La Verne J.V.

**Cross Country:**

Saturday, October 11, 10AM at Caltech:

Caltech vs. Redlands, Occidental & Whittier

**Water Polo:**

Saturday, October 11, 10AM at Chaffey:

Caltech vs. Chaffey College

Wednesday, October 15, 4PM at Caltech:  
Caltech vs. Cal State Los Angeles

\*\*\*\*\*  
**all the news that fits in print**  
 \*\*\*\*\*

**GSC PARTY**  
 Grad Students! GSC party is today, starting at 4:30 between Gates and Dabney. Beer, Cheese, wine and et cetra.

**WALLET LOST**  
 Anyone finding a brown leather wallet, containing some Canadian currency, please contact Chris Thompson; 1-60, Blacker House. \$5 reward.

**IT MAKES THE WORLD GO 'ROUND**  
 The Caltech Student Investment Fund will have its first official meeting on Monday, October 13, at 7:30pm in the Millikan Board Room (for freshmen, that's the blob in front of Millikan Library). We are students who play the stock market with money donated to Caltech by Stan Johnson, a generous alumnus. (So far, we've made money.) Any students interested in learning about or participating in the wide world of stocks and bonds (or if you just want to see the inside of the Board Room) should be there on Monday night.

**JOBS\*JOBS\*JOBS**  
 Arco Oil and Gas Company, Los Alamos Scientific Laboratory, the International Association for the Exchange of Students for Technical Experience, and a cast of thousands are anxiously awaiting your job application. For information, see the mellow folks in the Placement Office, Room 8, Dabney Hall.

**THE RIVET ARE COMIN**  
 ...but the little t is here! A undergrad who shelled ASCIT dues this term can p up a copy of this erstwl publication in Theresa's off in Winnett.

**BETTER SHOP AROUND**  
 The Caltech Student Sh will have its organizatio meeting Saturday, October in the shop (basement Winnett). Anyone wishing use metalworkin woodworking or weldi equipment should come to t meeting. Dues are \$4 per te or \$10 for three terms. A key deposit is also require Anyone who has been member previously sho come at 1pm. New memb should come at 1:30pm. F more information, cont Dave Sivertsen at x2814.

**FLYING**

**People are interested!**  
 For those of you who saw the news brief last week about 'building an airplane,' the first meeting of the Caltech Redesigned Airplane with Student's Hindsight (CRASH) will meet in Winnett Student Center (Clubroom 2) at 7 PM on Tuesday, October 14. This will be an organizational meeting.

**GAY DISCUSSION GROUP**  
 The Caltech Gay Discussion Group will meet in the Y Lounge (above Winnett Student Center) at 7:00pm Friday, October 10.

**GRAD STUDENTS**  
 The GSC party is today! Starts at 4:30 between Gates and Dabney Hall. Beer, cheese, wine, et cetera.

**TIRED OF BEING A WIMP?**  
 A Jui-jitsu class is now beginning, Sundays at 2:00 in the Gym. Jui-jitsu is a Japanese martial art related to Judo. The instructor is a black belt and a national champion.


For those of you who don't know what I'm talking about: CRASH is a new organization of students devoted to designing, building and flying an airplane of the pedal-power type. We need AE's, ChE's, ME's, Ph's, Bi's, MS people, extra hands, anybody!  
 During this last week, several people showed an interest in CRASH. The meeting on Tuesday will decide just who will be doing what.  
 Come to CRASH, Tuesday at 7 in clubroom 2.

**GET TEED OFF!**  
 If you like to play golf and are interested in playing on the golf team this year, please come to the team meeting at 4:30pm this coming Thursday, October 16 in the classroom at the gym. We need you to show up or let the gym office know your interest by Thursday, because if we do not have enough potential players, we may be forced to drop out of the league. So come to the meeting so we will have a good chance to beat some other schools.

**OVERSEAS**  
 The International Association for the Exchange of Students for Technical Experience is now accepting applications for training abroad. On-the-job training abroad is available for students in Engineering, Mathematics, Architecture, and the Sciences. Application Information can be obtained in the Placement Office, Room 8, Dabney Hall.

With Bank of America, you won't have to stay up nights worrying about your checking account. We offer several checking plans and a variety of banking services that make checking easier.

**Check into our checking plans.**



Select Checking™ is economical if you only write a few checks a month. With the Option Plan™ the higher your balance, the less you pay in service charges. And with InitialLine™ Checking\* if you qualify, you get a line of credit with your checking account. And a way to qualify faster for a BankAmericard® Visa® credit card.

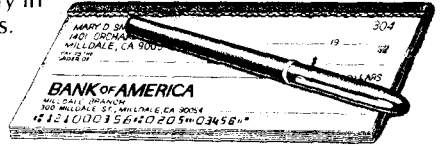
**Study our services.**

Our Money Convenience System™ includes: Monthly Timesaver Statements® — an easy way to help balance your checkbook. Money Transfer Service — great if you're getting money from home. Extended banking hours at many of our branches. Free Consumer Information Reports — on everything from checkbook balancing to ways to finance your college education.

**Rest easy.**

We have people ready to help with your banking needs. Come on over. Find out more about checking or any other banking problem that's been keeping you up late.

\*If you're a full-time student of sophomore standing or higher attending college in California, you may qualify for InitialLine Checking. Freshmen may qualify in some cases. See us for details.



**BANK OF AMERICA**

Bank of America NT&SA • Member FDIC

# How to avoid pulling an all-nighter over your checkbook.

Postage paid at Pasadena, California. The California Tech is published weekly except during examination and vacation periods by the Associated Students of the California Institute of Technology, Inc., Winnett Student Center, Caltech 107-51, Pasadena, California 91125.