

## Staff Poll

By Bruce Sams

The Institute is planning a survey of campus staff in an attempt to find out what people do and don't like about their jobs here. The survey was first proposed by the Staff Options Committee of the OWC who met over the summer and fall to discuss dissatisfaction over benefits, chances for advancement, salaries, etc. They then wrote a questionnaire to be distributed to the staff.

The Institute denied them permission to use the campus mail system. Instead, management offered to conduct a survey of the staff, set up by a professional consulting firm. The choice of the firm was to be agreed on by both the representatives of staff and management. Both groups will receive the same information, and will see the same results from the survey.

Goodmeasure, Inc., of Cambridge, Mass. was selected to conduct the survey, and their representative, Dr. Barry Stein, will direct the work that is to be carried out over the next few months. Dr. Stein wouldn't say what his firm was charging for the work, only that bids ranged from \$12k to \$32k and that his firm's was "neither highest nor lowest".

About 1400 staff members will be surveyed, and since the survey will take each of them an hour to complete, the total cost for the survey will be at least 40 kilobucks. So why spend all this money?

Caltech has an alarmingly high job turnover rate of "about 30%", and this is bound to cost lots of money every year in wasted training time for new employees. If an intelligent survey can be made that lets management understand what the staff members don't like, then a lot of time, money, and frustration could be saved.

If the staff are interested in their futures here it seems that this is an excellent time for them to voice their opinions. Chances are that this survey (unlike most) will have a real effect on management. The Institute will not receive the questionnaires, but only the tallied results of Dr. Stein's work, and so immunity is assured to those who are dissatisfied, and it is not possible for either side to "doctor" the results in any way.

Carmela Kempton of the OWC says that although there is great dissatisfaction among the staff, that management is making "a sincere attempt" to "make this survey significant".

Although it's fairly obvious that management isn't likely to fork out forty thousand dollars purely out of the kindness of their hearts, it's also clear that if they're willing to spend this much time and money then they are seriously interested in the results.



Interhouse Track (and a Page Dude) get off to a relaying start, as the season began this week.

## Nuclear Power in America's Future?

by Robert Hill

Is there a place for nuclear power in America's future? Dr. Lee Silver will bring a geologists' perspective to these and other problems facing the nuclear industry on Thursday, February 12 at 7:30 p.m. in a talk in the Winnett Lounge sponsored by The Caltech Y. It is now being more widely realized that many of the problems currently experienced by the nuclear industry have geological implications, perhaps even geological solutions. The ends of the fuel cycle, in particular, are perhaps best handled by geologists. Where does the uranium come from? Where does the waste go? Dr. Silver has spent much of his career trying to understand the behavior of uranium and thorium and their radioactive daughter products within the natural environment. He has been particularly interested in the behavior of zircon (zirconium silicate), a mineral which can contain substantial amounts of uranium substituting for zirconium in the crystal structure. Zircons have been found which have retained their radioactive daughter products quantitatively for nearly 4 billion years. Other zircons expel their decay products. What conditions are needed to keep zircons intact? Could zircon, or a mineral like

it, be manufactured to similarly keep artificially produced radioactive materials immobile for substantial time periods?

The debate over nuclear power within this country has been heated and noted for rhetoric rather than facts. If you're interested in hearing the perspective of a man who worked hard to understand the facts about uranium in the environment, come and listen to Dr. Silver's talk "Geological Considerations in the Utilization of Nuclear Energy in our Energy Future."

### Serious Stuff

## IMMODEST PROPOSAL

The recent ASCIT by-laws ballot called public attention to some serious faults of the democratic process, at least as it exists at Caltech. The ASCIT Excomm correctly assessed the problems with the current system: several realistic candidates often prevent each other from gaining a majority on the first election; "voter indifference erodes the turnout in successive runoff; and "no" votes can delay a close decision until the third ballot, when they are discarded. This last is

perhaps the most exasperating of all, as demonstrated in this week's Academic Affairs Director election. A roughly 5% "no" vote stalled a decision until yesterday's runoff; this second runoff was undecided at this writing. It will look really silly if the candidate who had a plurality in the first place wins three days later, anyway. But if the other contender wins, it will be just because his supporters flaked out less than the other guys did.

In either event, a change is

clearly needed. The electorate balked at the ExComm's proposal of using "Approval Voting," apparently unwilling to believe that a vote isn't diluted when you cast more than one of them. I am proposing a slight adaptation of the existing system, specifically designed for ASCIT elections. In this electoral system, [Sorry Big Red; it's not what you think—eds] known as "Baa-aa Voting," the voter has the same old alternatives—to vote for one of the candidates, a write-in, or "no"—and one new alternative, to vote "baa-aa." The "baa-aa" vote says in effect "I'll go along with the crowd. Whatever everyone else picks is fine." Then, after the votes of those people expressing any preference (for a candidate or "no") have been counted, the "baa-aa" votes are given to the front runner. Usually, this will decide a majority when those voters expressing a preference were unable to do so by themselves.

Let me stress here that, despite some superficial similarities, "Baa-aa Voting" is not very much like "Approval Voting" at all. In this week's ASCIT election for example, the first ballot showed a total of 531 votes cast, but fewer than 500 cast for any one office (most had around 440 votes).

CONTINUED  
ON PAGE 2

## SIF Elections to Occur Soon

By Grace Mah

Well people, this is your last chance. Elections for the Student Investment Fund Board of Directors is next week, February 13.

You may wonder, "What do they do, anyway?" Well, it all began in May, 1979. A generous alum, Mr. Stan Johnson, donated \$55,000 to the Caltech undergraduate student body to learn about investments. Six undergraduates and three graduate students undertook the job of writing bylaws for the fund and making the initial investments. From that time, the investment has grown to \$85,000 at last count.

It's pretty amazing. We have this money, more than you or I probably have, to spend on the stock and bond market. It's really quite an opportunity to play the investment game with someone else's money. We make predictions for the economy and individual stocks, and in the end, heedlessly make money (at least so far).

Interested? Undergrads should get an application from Therese's office in Winnett Center. Graduate students should contact Albert Lin (x4648, 104-44). The elections for undergraduate members are next week, February 13, so the

applications should be returned on Monday, February 9. (California Tech statements must be submitted by February 10.) Any questions? Ask me (x6172, 1-59).

And for those of you who want to see us in action, whether you apply for directorship or not, our next meeting is on Monday, February 9 at 5:00 pm in the Trustee's Board Room. See you there.

**Mandatory  
Lit 15 Meeting  
Today at 12:20  
Baxter 128**



# EDITORIALS (and other such lies)

The process of legitimization and policy-formation has been the bane of quite a few governments over the course of history. Many military *jun-tas* and other power-seeking groups have tried to justify their takeovers by rehashing the usual excuses like "it was for the good of the people," "we had a mandate from the proletariat," or some such handy



## THE CALTECH Y ..... FLY-BY

Today, Friday, February 6: a NOON CONCERT featuring THE TOONS! On the Quad or in Winnett in case of rain. Bring your lunch either way. A P. Pat Production.

Wednesday, February 11: LAKERS v. CELTICS basketball at The Forum. Sign-up for this game will be on Friday, Feb. 6 and Monday, Feb. 9. There will be 25 tickets available at \$5.00 each. A lottery for these spaces will be held if necessary—the names of the winners will be posted on The Caltech Y window at 5 P.M. on Monday. The tickets may be picked up Tuesday. Limited transportation will be available.

UPDATE NOON DISCUSSION lives on! This afternoon, Dr. Jim Hudspeth, associate professor and executive officer for Biology, will talk on "Audio Engineering in the Inner Ear" (get it? "talk...on...audio..."—JSV). The topic title is self-explanatory, so if you're interested, or even if you're not, come to Clubroom One in Winnett at noon with your lunch and listen to a very good lecturer (get it? "listen...talk on...audio—JSV").

CAREER COUNSELING seminar at 7:30 P.M. in the Y Lounge. The subject will be "Careers in Investing" presented by two Caltech alumni: Paul Levine (MS '57, PhD '63) and Stephen Garrison (BS '65, MS '67). Come on over for a very informative and perhaps profitable evening.

Sign up for the MAMMOTH SKI TRIP scheduled for February 19-22. The sign up will be on today (Feb. 11) only. The price is \$60.00 for lodging, transportation, and meals. A lottery will be held for the 16 available spaces. Winners will be posted Thursday on the Y window. Sign-up will end promptly at 4:30 P.M.

Thursday, February 12: Ever wonder about geological considerations in the utilization of nuclear energy in our energy future? Well, to satisfy this insatiable interest of yours, the Y brings you Dr. Lee Silver, professor of geology, for an EVENING SPOTLIGHT presentation entitled (surprise!) "Geological Considerations in the Utilization of Nuclear Energy in Our Energy Future." At 7:30 P.M. in Winnett Lounge.

Friday the Thirteenth: it's P. Pat Concert Time again. This week the Y is proud to present once again THE NAUGHTY SWEETIES. Don't miss this NOON CONCERT 'cause:

it's too good to be true  
coming for you  
no need to be blue  
Kalamazoo  
(well, it rhymes)  
(JSV, 1981, ASCAP)

Saturday, February 14: a TRIP to the Pacific Asia Museum at 10:30 A.M. On exhibit: China's Inner Asian Frontier; Bhutan, the Himalayan Kingdom. Sign-up begins Monday, Feb. 9, and ends Wednesday, Feb. 11. If necessary, a lottery will be held for the 25 available spaces. We pay for admission, provide limited transportation, and give you a little of our time. All you have to do is give us a little of yours.

Sunday, February 15: a free DODGERS-USC game. It's the annual public workout and game against USC at Dodger Stadium. There is no charge for admission or parking. Everybody is invited (except for Juanito Villanueva). The stadium opens at 11:30 A.M. for the workout, with the game scheduled for 1 P.M. The Y will provide limited transportation. For more information, contact your local Caltech Y representative.

phrase to the effect that the ruled wanted *them* to be their dictators. Then, they would embark on some "great plan" that would aid the nation for awhile, success or failure depending on the state of apathy that existed among the people.

So, having successfully toppled the previous autocratic reign four weeks ago, we conned ASCIT into having an election to legitimize the *coup*. After the abdication, we became complacent, letting our guard down, merely running the *Tech* with no regard to what direction the newspaper would take. We waited for the first sign of insurrection within the ranks of writers and photographers over this. It never came.

Why? After a few weeks of reflection, we've come to a conclusion: Most people did not care whether or not the *Tech* had a theme or a personality of its own; it was merely a notice board of some kind for them. Though this is a hackneyed joke around Caltech, the previous editor indeed no longer wanted to be *Tech* editor. Why? If one looks through the memories of hours ill-wasted, of numerous complaints lodged and ignored out of necessity, of people barging in Thursday night asking to place that "one little news brief," of missed deadlines and impatient printers, of mistakes made mountains, of articles not turned in, not to mention the great amount of apathy which already exists, perhaps one will come to an understanding.

Though Stuart is gone, there will be no reactionary nor radical realignment; simply, the *Tech* will continue as it always has, perhaps humorous, perhaps mediocre. Some feel that this is a cop-out, that the *Tech* has lost its personality. Let them think so; in fact, it *does* have a new visage, one of making six letters do the job of seven, one of austerity tinged with wry (grin and bear it) humor. Finally, it will come out every non-final, non-holiday Friday, as it has for the past sixty-eight or so years. And why not? We've got a mandate from the people.

—Tracy Furutani

## Serious Stuff

# BAA

FROM ONE

Under "Approval Voting," those numbers would be the same, as the 90 or so voters with no preference for some office still wouldn't care enough to approve anyone. But under "Baa-aa Voting," these 90 voters are able to express their exact feelings toward that office, and make their voice heard in the electoral process by letting everyone else make the decision.

"Baa-aa Voting" is a sound system, and could add a great deal of efficiency and expediency to ASCIT elections, by involving a large portion of the electorate who are now being ignored. It is ideally suited to Caltech and, if it's successful here, could perhaps be applied on a state or even national level someday. I encourage you to talk to your house ASCIT Ex-Comm member and urge him/her to support the institution of "Baa-aa Voting" in ASCIT elections.

—Dave Younge

### Addendum

In the Saga food article last week, it was Bob Gang, not Kevin Mulcahy, who refused to let copies of the Saga food contract circulate on campus.

FRIDAY NIGHT **ASCIT MOVIE** 7:30  
10:00

TONIGHT:

50¢ ASCIT members      Baxter Lecture  
\$1.00 All others          Hall

NEXT WEEK: **"THE CHEAP DETECTIVE"**

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**Editors-in-Chief**  
Roger Fong  
Tracy Furutani  
Ed Suranyi

**Associate Editors**  
Alan Loh  
Dave Younge  
Stuart Goodnick

**Writers**  
Joe Balke, Margie Farrell, Les Grate, Ollie Graves, Lisa Grenier, Grover, John Krehbiel, David LePoire, H.N.I. Mayhem, Chuck Nichols, Richard Pogge, Bruce Sams, Lee Sunderlin, Glenn Swindle, Mike Walsh

**Cartoonist**  
Luke Will

**Photographers**  
Ken Gant, Grover, Paul Ste. Marie, Steve Swanson, Mark Waggoner

**Production**  
Nick Smith

**Business Manager**  
Gavin Claypool

**Circulation Manager**  
Paul Eskridge

**Special Consultant**  
Manny

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# SPORTS

## A Different Game

By P.G. Hephzibah

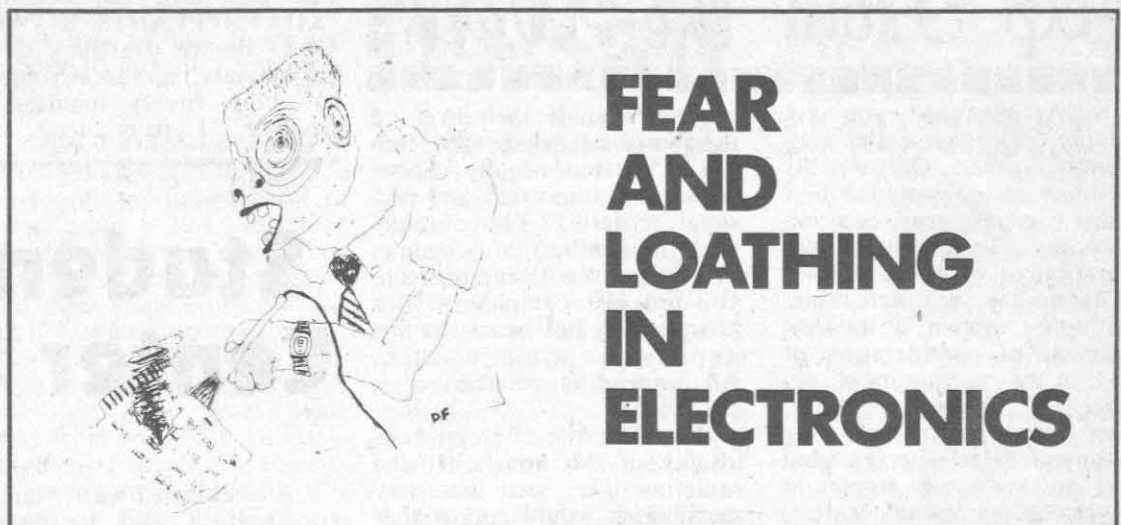
When the 1981 version of the Caltech baseball team takes the field against Oxy tomorrow, they will aim to improve on last year's season which saw Tech win a mere two games.

This year's team is a balance of youth and experience. Seniors Jamie Abbott (pitcher), Larry Friedrich (2nd base) and junior Bobby Buck (1st base) will play important roles as returning lettermen. Alphonse Sterling and Brad Evans are expected to provide Jamie with some much needed help in the pitching department. Steve Haustad is a freshman who also shows promise as a pitcher.

Bill Marshal (Sr), Brett

Spivey (Sr), Steve Jones (Fr) and Brad Brock (Fr) will handle outfielding duties this year. Chris Burak (Fr) is the catcher.

The main problem with this year's team is the fact that the roster is a little on the thin side. Several of last year's key players are currently playing basketball. Armand Capote and Howard Kong are expected to start at third base and short-stop respectively. Doug MacKenzie and Perry Walker are other baseball veterans expected to play after basketball season ends. Coach Ed Preisler feels that if his team can stay healthy, that it has a chance to put in a respectable showing in this 1981 season.



## FEAR AND LOATHING IN ELECTRONICS

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Analog and Digital Engineers

**Sales and Marketing Support—**  
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**CAMPUS INTERVIEWS: FRIDAY, FEBRUARY 13**  
at the Cal Tech Placement Office.  
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### NUCLEAR REACTOR MANAGEMENT TRAINING: OPENINGS/OPPORTUNITIES

Department of the Navy, Division of Nuclear Reactors is accepting applications for nuclear propulsion management trainees for openings beginning in June 1981.

Additionally, College *Sophomores* or *Juniors* can apply and if screened successfully, can qualify for up to \$800 a month retainer until completion of college. (Also available to grads in masters programs.)

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# Up From the Well

Nearly everyone you ask will say, "Of course I'm considerate of others. Only a really worthless person wouldn't be." And it is usually true, especially here at Tech, where consideration of others is a built-in, day-to-day, accepted thing. The honor system is the embodiment of consideration of those in the community. Ergo, Caltech is a wonderful place, where absolutely no one gets on anyone else's nerves, and there are never any ripples in the serene emotional waters. Right?

Not quite. Consider the not-too-long-ago period of intense Rfing which we all remember (some of us more than others). As a result of those incidents, more than a few people got a tad excitable, and a SET OF RULES was handed down from on high (the Grand Royal Muckamucks of Authority, I think it was) which spelled out in precise detail what was and was not permissible in the way of an RF. Do we really need to have explained what is reasonable?

Consider the common bitch. (No, not Food Service.) People at Tech, as a rule, don't

appear to guide their lives on the basis of where the Sun might be, but usually choose some more important and personal criteria. This rapidly leads to conflicts of schedule, i.e. while Joe is trying to sleep, you are just completing your home-brew 300 watt/channel amp and are dying to test it. An impending altercation is possible.

Consider the alley kitchens, in any of the houses. If the sampling I've seen has any meaning, it would appear that few people, if any, are aware of the Law of Conservation of Dirty Dishes and Elbow Grease. Dishes do not, even with the "help" of the maids, freds, etc., become clean spontaneously; if anything, they tend to spread their fungi onto other dishes. Five people can thoroughly rape a kitchen.

Do you see a pattern? The average person, considerate in all important matters, often is unconscious of smaller items which turn out to be equally important. I won't press social remedies on you, you have undoubtedly already figured them out for yourself.

Sorry for preaching. Now for the less tiresome stuff: if

you haven't yet bought a copy of the National Enquirer, do so (the one with the headline, "KILLER PLANTS INVADE USA—they're strangling sleeping animals") and treat yourself to about twenty minutes of laughter. I recommend this

highly to all students, instructors, staff, etc. Stay informed! The snow line is down to 4600 feet. —the realist P.S.: would you believe I don't even get paid to write this column?

# Student Health Center Revisited

By Joe Balke

A week ago I wasn't feeling too well. I said to myself, "Don't worry, Joe. It'll go away in a little while." Those have probably been the last words of many other idiots like myself. When someone else said, "Joe, you don't look too good," I thought that it wouldn't hurt to have my temperature taken and see if I was as dead as I felt. When the mercury hit 102.2, I said, "Wow, I guess I am sick!" The kindly RAs of Ruddock hustled me over to the health center where I managed to get a couple of real, non-Saga meals and some much-needed rest. Afterwards, I managed to walk back to Ruddock under my own power.

The flu has been going around, and if you start to feel really burned-out, and you know it's not drug-induced, get yourself over to the health center. It's better to be miserable for one day than for a week (unless you're a masochist). Too many students don't take advantage of the facilities available to them, and it's just outright stupidity. Remember that midterms have arrived, and bodies that are tired-out from late-night trolling sessions are going to be highly susceptible to the flu. This is just some good advice from one person who has survived the attack of the dreaded flu bug. (At least, I think I survived. I don't know, this article was pretty bland and dead...)

# Ripoff

[Has the outside world ripped you off, short-changed, no-changed, or refused to deliver you the advertised goods? If so, write it up as clearly and coherently as possible, and we'll print it here. You may ask that your real name not be used, but you must include said real name in case we need to contact you. At the very least, it will make you feel better. Who knows? We may even get some genuine action taken against the rippers.]

One night after making a run to the Pantry for some necessities, I decided to walk through Winchell's Donut House and pick up a free game card. (They currently have a promotional game going on that could be worth \$10,000 if you're lucky enough to get the right card.)

The employee refused to give me a card. I then explained to him, while pointing at a copy of the rules that was on display, that the words "No Purchase Necessary" were meant to be taken literally. At this point the man became extremely rude and called me several things that some of the other customers were shocked to hear. (I'm not saying what he called me because some of you wonderful readers would probably agree with him wholeheartedly.) He then told me that it didn't say any such thing, that I was trying to trick him. I tried to get him to read it, but he couldn't get past the first line of the rules. The man couldn't read! He then told me that the manager said he wasn't supposed to give any game-cards out to anyone who didn't buy anything. I called the manager and talked to him about it, and he told me that he didn't have to talk to any young punk. If anyone who reads this article happens to know anything about the laws governing games of this sort and their sponsors, please come over to Rm. 131 Ruddock and ask for Joe. I'd like to find out if that manager can legally do what he's doing.

—Joe Balke

**Lights! Camera! Action!**  
Are you interested in filmmaking, cinematography, special effects, set design and construction, costume design, lighting, writing, or directing? If so, then the Caltech Film Workshop is for you! Meetings are held Wednesdays at 5:00 p.m. in the Master's Office. Be there! [Cut!]



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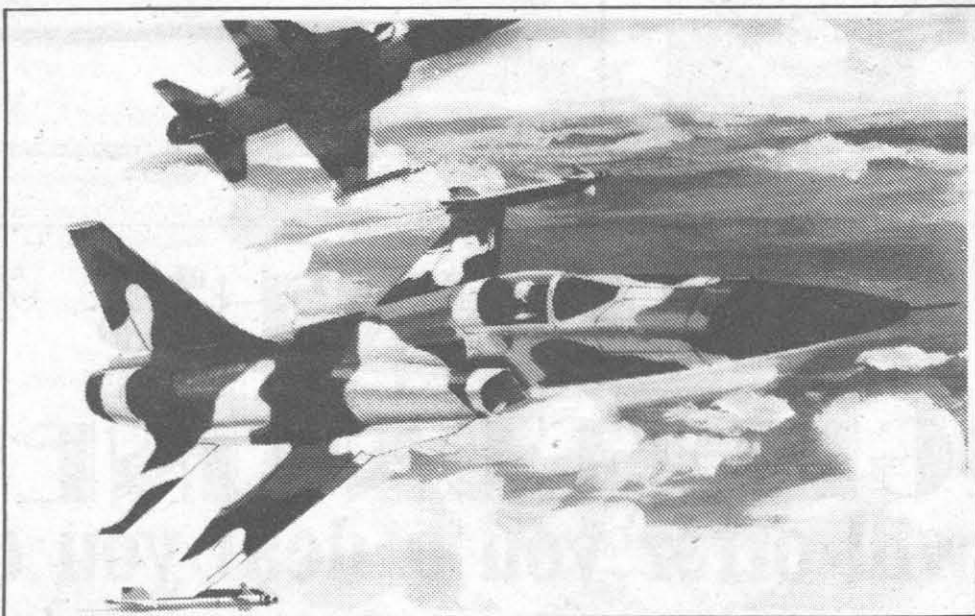
# ON CAMPUS INTERVIEWS FEBRUARY 9

## 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.

February 1981

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.



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Travel Lane

Billie und Ich

"One can make a ten speed bike function exactly in terms of one's personality" B. Fischman, *The Man Who Rode His Ten Speed Bicycle to the Moon*

Billie and I were sitting in Ruddock's "1.5" last Friday after seeing the ASCIT movie. Billie really likes Donald Sutherland and I could see that she was in a good mood even though she wasn't saying much. Since I knew that any conversation regarding the movie will soon turn to talking about Sutherland, M\*A\*S\*H, *Animal House*, and so on, I decided to find some other topic that was completely unrelated. Soon, the topic of our conversation was on our favorite topic: biking.

Billie and I have been going out for over three years and some of our best times have been spent on the road. When we say "the road", we mean

outside the 5-mile radius of your home base. This allows you to sample neighborhoods that are completely different from what you are used to. Also, getting away from your immediate neighborhood allows you to meet people other than your immediate neighbors. Although many feel that it is awkward to get to know total strangers on the streets, the fact that you are biking will help you. First of all, any dedicated biker you meet will be willing to exchange a few words and sometimes will even go out of the way to have more time to talk to you. One personally memorable example of this type is the girl biker that said, "I'm glad that there is someone else on the road."

Bikers are not the only people you can get to know on a bike ride. In fact, there is almost no way to predict who

you may meet. For example, on last week's ride to the Sawpit Canyon Dam, a couple of girls in a Z-28 liked the rear view mirror on my glasses and stopped to tell me. You never know...

A good way for someone in pretty good shape to spend a not-too-warm afternoon is to spend it on a 30+ mile bike ride. Even better would be 50+ miles. You will spend at least three hours on such a ride but if you go about it properly, it really is not such a big deal. You only have to overcome the fear that arises from being away from your base with only your power to get you back.

To overcome this fear, it is important for one to be prepared. First, you must be confident about your health. A healthy person can ride 100 miles per day without much trouble; some can do over 200. Therefore 40 miles should not be a problem if you are careful not to overexert yourself in the beginning. This means that you should start slowly and pick up your speed as you tick off the miles and as you warm up. Knowing how to fully utilize the bike's gears will be helpful here. You should also shift gears all through the trip so you do not overexert yourself at any one point.

You should also be confident about your equipment. This means that your bike must be well maintained. You should also carry a small tool kit, pump, and patch kit/spare tire. You also should not neglect your body. Remember to take a full water bottle and maybe something with high sugar content. The latter helps in avoiding cramps. Some money, a map, and an ID may also be a good idea.

If you are spending an afternoon riding your bike, remember to stop and rest if you are tired. You may find someone to talk to and get something to eat. Take your time. Don't push yourself, you are out to enjoy. If you are in some unknown territory, look around and find something that may interest you. You never know, it may be your lucky day.

Y-Sail

By Lee Sunderlin

Eleven people went sailing last Saturday on a trip sponsored by the Caltech Y. They rented a 32-foot Islander for the day from a club at Marina Del Rey.

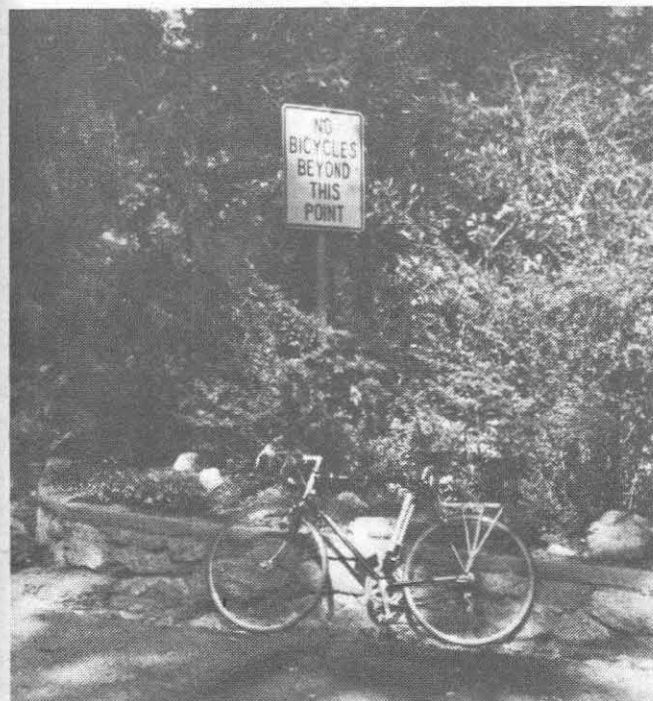
The sloop was skippered by Don Skelton, a sailor with 20 years of experience. It was crewed by ten grad and undergrad students who had won the lottery for the limited positions on the boat. Fortunately, four of them knew how to sail, and although there were many minor mishaps, no serious problems developed.

The day started out clear and cold, with some wind. The sloop sailed up the coast for a few hours and then headed out

to sea. Safely out of range, the passengers enjoyed the view as smog developed over the Los Angeles area. The wind began to pick up, and at times reached 30 knots. The sail area had to be reduced, the boat heeled over at a steep angle, and constant force had to be exerted on the wheel to keep the boat on a steady course. The boat was not sailed directly with the wind; its speed was still from four to six knots, which was nearly the maximum for the craft.

The final run into the harbor, with high breakers, and spray was exhilarating, except for one unfortunate person who was seasick at the time. The trip lasted about six hours, with several more spent in driving and organization.

The Y has plans to rent more boats for trips about once a month. If you are interested in sailing (or just leaving Tech for a day), look for sign-up sheets for the next trip.



A law-abiding bicycle patiently awaits its master. Scene is somewhat complicated by the mass of shrubbery engulfing the unfortunate sign.

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# Body shop

Would you like to know what your life would be like in future years? Or how long you could expect to live?

Although we do not have a magic mirror to look into, the way we take care of our body has a lot to do with it. The focus today is on preparing for tomorrow, on developing healthy outlooks and examining new possibilities. There is no age limit for fitness, for taking care of yourself.

The Longevity Game concept was developed by Northwestern Mutual Life Insurance Company to alert the players to some things that are important to a healthy life based on information gathered by life insurance and public health organizations.

The rules of the game are that you start with a life expectancy of 74 years, and make your moves from there depending on your answers. If a question does not apply, go on to the next one. The final answer will give you a calculated life expectancy.

1. **Exercise:** If you "work out" each day or if your work requires regular, vigorous activity, add 3 years. If you don't get much exercise at home, work or play, subtract 3 years.

2. **Relaxation:** If you have a relaxed approach to life (you roll with the punches) add 3 years. If you're aggressive, ambitious or nervous (you have sleepless nights, you bite your fingernails), subtract 3 years, and, if you consider yourself unhappy, subtract another year.

3. **Blood Pressure:** High blood pressure is a major cause of the most common killers—heart attacks and strokes—but most victims don't know if they have it. If you have had your blood pressure checked within the last year and your blood pressure was normal, add 1 year.

4. **Smoking:** Cigarette smokers who finish:  
 2+ packs a day -8 years  
 1-2 packs a day -6 years  
 1/2-1 pack a day -3 years

5. **Drinking:** If you drink two cocktails or beers or glasses of wine a day, subtract 1 year. For each additional daily libation, subtract 2 years.

6. **Weight:** If you avoid eating fatty foods and you don't add salt to your meals, your heart will be healthier and you are entitled to add 2 years. Now weigh in; if you are overweight by:

50+ pounds -8 years  
 40-50 pounds -6 years  
 30-40 pounds -4 years  
 10-30 pounds -2 years

7. **Drivers:** Younger drivers who have had traffic tickets in the last year or have been involved in an accident, subtract 4 years. Other violators minus 1. If you always wear seatbelts, add 1.

8. **Family:** If any grandparent has reached age 85, add 2. If all grandparents have reached age 80, add 6. If a parent died of a stroke or heart attack before age 50, minus 4. If a parent or brother or sister has or had diabetes since childhood, minus 3.

9. **Sex:** Women live longer than men. Females add 3 years, males subtract 3 years.

10. **Age:** How long you have already lived can help predict how much longer you will last. If you are under 30, the jury is still out.

30-40 years +2  
 40-50 years +3  
 50-70 years +4  
 Over 70? +5

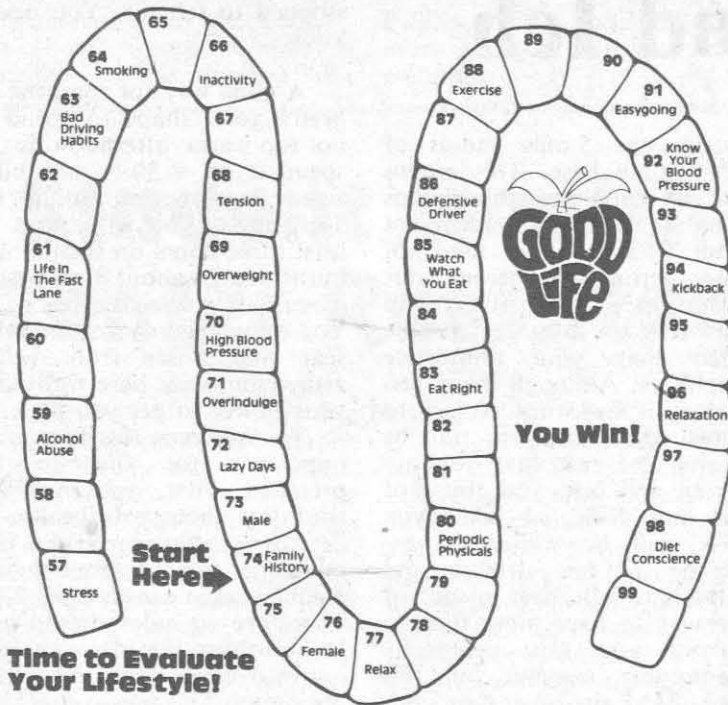
11. **65 and Working:** If you are 65 or older and still working, add 3 years.

**GOOD LUCK!**

In future issues we will explore in detail some of the ways one can improve his lifestyle and life expectancy.

-G. Ketabgian, M.D.  
 Health Center 1-8

## The Longevity Gameboard



**Time to Evaluate Your Lifestyle!**

### Self Defense II

A self-defense course will be taught by Phyllis Nelson of Caltech. The course will run eight weeks and meet from 7-9 pm on Monday evenings in Winnett Lounge beginning February 9, 1981. Your cost for the entire eight week course is \$7.50 (\$5 or Caltech students)—an incredible bargain—the Y and the OWC will absorb the remaining cost. Application forms may be obtained in the Y office.

### Period?

The Caltech Cycling Club, Period [honest, it says that right here on the piece of paper], will be having our weekly search for the ultimate bike ride. If you are interested in going show up in front of Winnett Student Center at 9:00 am on Saturday. See you there.

### GSU Meeting

The Caltech Gay Student's Union will have a meeting February 6 at 9:30 p.m. in 218 Baxter.

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*In the meantime, if you would like to know more about us and the many opportunities we offer, our career brochures are available at the Placement Office.*

*Harley Thronson*

Harley Thronson  
 Corporate College Relations Manager  
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# MORE SPORTS

## Women's Soccer Picks Itself Out of Mud

by J. Fernandez

Caltech's Women's Soccer team is off to a modest start this year. The first two games of the season ended in a 6-0 loss to the Jazz and a 1-1 tie to the Poor Sports. Despite the opening loss, the general feeling of the team is one of promise.

The team is coached by three members of the men's soccer team: Brian Dunkeld, Dave Marvit, and John McNal-

ly. The team members are almost entirely undergrads, with the exception of one grad and one staff member. The captain is Julie Kornfield, and Sue Fuhs is the team's league representative. The league is composed of teams from Pasadena and other local areas.

Last year, the team played poorly, winning only one game and tying only one. But this

was hardly the fault of the members, many of whom had never played before joining the team and who learned as the season progressed. This year's team is much stronger, being composed of many of last year's (now much more experienced) members as well as new players (some of whom have played before joining Caltech).

The teams strong points are: a passing game, good attitude by all team members toward the game and each other, enthusiasm, and an opportunity for everyone to play. The general approach to the game is passing and ball control—setting up plays through teamwork instead of individual stars. The girls tend to try to use more *finesse* through play-making instead of one-woman

drives to the goal.

Unfortunately, the team's weak points dominate over the team's strong points. The problems seem to be: conditioning, refining basic skills, and getting used to solid team play. Soccer's hardest facet is conditioning, since there are two 45-minute halves (no time-outs) of continuous movement, mainly running. There have been many injuries this year, mostly from pulled muscles and sprains. Many potential scoring plays have gone awry due to missed kicks, wide passes, and stolen balls. The players are not yet accustomed to knowing when to pass and when to keep the ball, how to cover opponents, and where pass-receivers will be.

Despite the problems of being a young and inexperienced team composed of relatively inexperienced players, there is a great deal of enthusiasm—enthusiasm which has motivated many of the girls to arrive early and stay late for practices in an effort to improve. Soccer is a fun game for beginners and experienced players alike. Its appeal to the girls stems from the capacity to have fun and stay in or get into shape at the same time. Everyone on the team likes to play, likes everyone else, and wants to win.

By around the middle of the season, just about everyone will have gotten over the problems of conditioning, and basic skills will have been ingrained as well as possible. Communication will be improved so that people can be confident certain "blind" passes will work, and that charging the ball won't result in a vulnerable gap if the play doesn't work.

The season is still young and there's plenty of time to rack up wins. Everyone could lend a hand by showing up at the games and lending enthusiasm from the sidelines. If everything works well, there might be a league championship hiding somewhere.

# Beavers Beat Off Cal L.A.

By D. R. Tanyan

Saturday, the fencing team fought Cal State L.A. to a narrow victory, tying 2-2 in matches and winning 21-15 in bouts won. While the L.A. team has several brilliant fighters, the Beavers were more consistent and had the experience necessary to prevail.

The first victory for Tech came in Men's Epée, where Brian Kenney, Vince Powers, and Jim Cummings were each 2-1 and left none of their opponents undefeated. Brian fenced with cool and good distance, while Jim and Vince overwhelmed their opponents with repeated attacks and, in Vince's case, fast takes of his opponent's blade. Cal State's Epée team had good form, but were not as ferocious as the vicious Beavers.

This was not the case in Sabre, which is L.A. Coach Calvert's (Calvert was the coach here until five years ago) weapon of choice. Besim Yusef and David Peltz of L.A. both fought with great speed, and while Peltz pressed his cuts smoothly and precisely, Yusef bounced in shouting in Arabic when he connected. The combination was too much for sabreur Bruce Prickett, whose only victory was over Dave Styles, L.A.'s third fencer. But Ben Luisi ("Gee, I did an all nighter, I don't think I can fight today...") came through, surprising Yusef with lightning counterattacks to win 5-4, also defeating Styles. Alas, one bout does not a match win, and L.A. won the Sabre, 6-3.

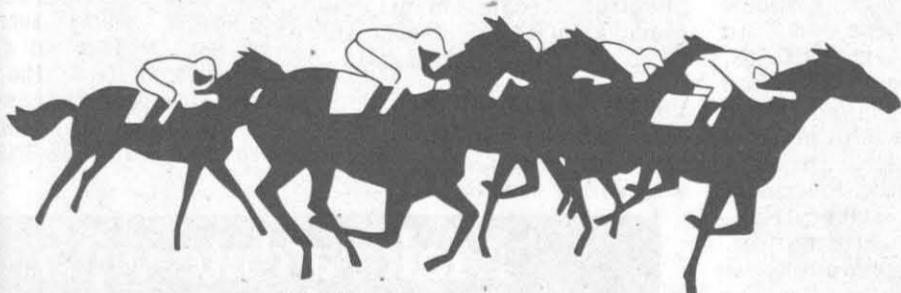
In Women's Foil, L.A. also won, with Barb Turpin and C.J. Beegle together winning 3 bouts, facing for the first time a woman as tall as either of them. Lisa Penninger was overwhelmed, as the aggressive L.A. women charged in.

This left L.A. ahead 2-1 in matches, 15-12 in bouts, as the Men's Foil team swung into action. In a four-man team match, the Beavers won every bout, winning by 9-0 when the match was stopped. Scott Prah led the way with his good distance and excellent defense, while Richard Pogge, Tony Miller, and Geoff Davriki followed through, pressing the attack on the less experienced L.A. foilists. After Tech had won this shutout, the L.A. team passed out cookies and adjourned with the more adventurous Techers for a party.

### Physics X Again

Last Monday afternoon at 5:00 p.m., about 65 eager frosh were gathered to see and hear our favorite Nobel laureate. Yes, Physics X has started again, although a little late. This traditional, informal class taught by Dr. Richard Feynman is generally run as a question and answer period for frosh interested in physics. As he explained the secrets of quantum mechanics to them, Dr. Feynman's easy style quickly had everyone convinced that physics can be fun. If this sounds like a good way to spend an hour in the afternoon, come to 107 Downs at 5 p.m. Mondays.

# This Saturday, anyone 18-25 who shows, wins.



If you're 18-25 years old (and can prove it), show up at Santa Anita on Saturday, February 7, and you'll be our guest with FREE General Admission—all you pay is 25¢ municipal tax.

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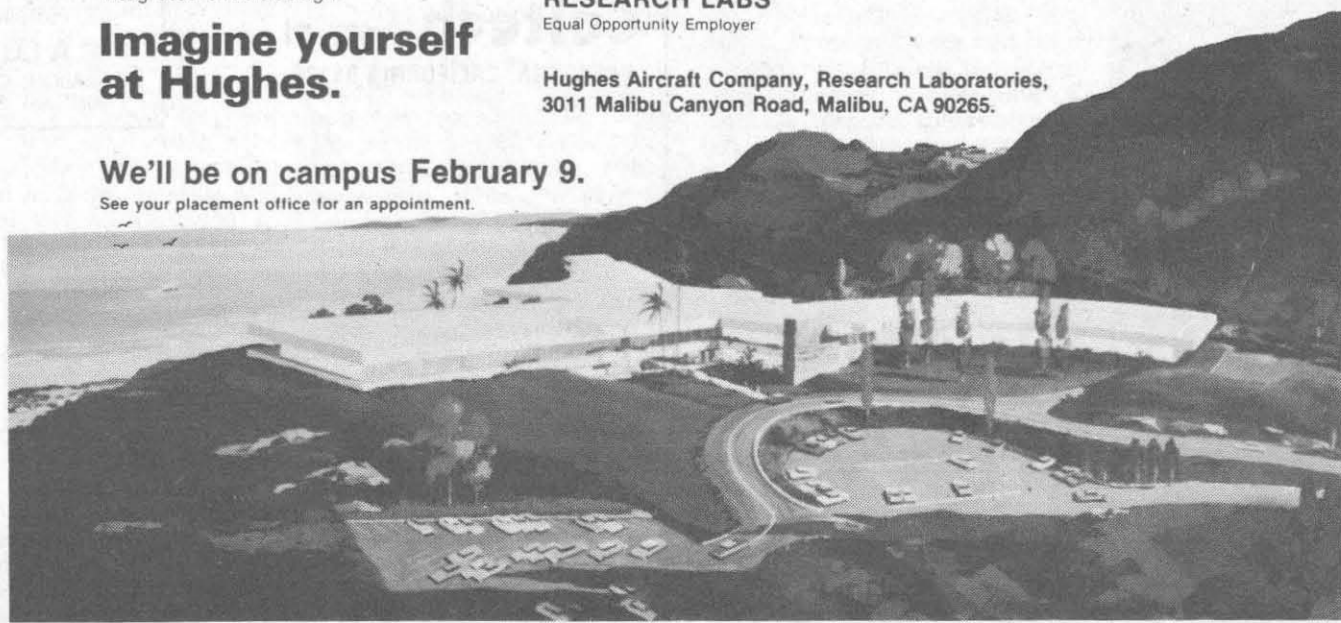
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\*\*\*\*\*  
 \* **stuff that didn't fit anywhere else** \*  
 \*\*\*\*\*

**Political Internment**

The Dean's Office is pleased to announce that the Beckman Internship will be available for the summer of 1981. This internship, supported by friends of Dr. Beckman, pays a stipend of \$2000 for a period of up to 12 weeks plus travel expenses. It allows a selected Intern to spend the summer working in the office of a politician and seeing the process of government from the inside. The Intern is expected to make arrangements with the appropriate political persons. It is open to any Caltech undergraduate who intends to be a Caltech undergraduate next year. If interested, contact either David Wales or Chris Wood in the Dean's Office, 210 Dabney, x6351.

Deadline: February 27, 1981

**Summer Hygiene**

The Department of Labor, Occupational Safety and Health Administration are accepting nominations for the position of Industrial Hygienist (GS-5). The location will be San Francisco, California and for a weekly salary of \$236. Specific Qualification Requirements are (1) U.S. citizenship required, (2) Preferred academic background in Industrial Hygiene, Chemistry, or Engineering, and (3) Graduate or Senior beginning graduate programs in the fall of 1981 preferred. To apply, please contact the Placement Office, Room 8, Dabney Hall. Deadline date: March 20, 1981.

**LOST:** Half-grown orange marmalade tabby cat, with matching orange eyes, answering to "Kitty" or "Fredegar". Last seen 2/3/81, wearing brick-colored leather collar and small black flea tag. Please call 794-9394 if you have info.

**Lit 7 No Myth**

Contrary to the catalogue, Lit 7 (Literature and Myth) will be offered next term.

**Candide Gets Desperate**

This year's Caltech musical, *Candide*, by Leonard Bernstein, is searching for talented pianists to act as rehearsal accompanists during the month of February. How about it? There *must* be students who play piano on campus who are looking for involvement in exciting, interesting and creative activities! Remember, we have lovely ladies in the cast...and a fine cast party, too. If you are interested, contact Student Producer, Chris Lindblad, or the Drama Office in Winnett Center, x6259.

**Summer At AMOCO**

A representative from **AMOCO Production Co.** will be on campus Wednesday, February 11, 1981 to interview students for **summer employment**. Locations: Rocky Mountain areas. Students who are **sophomores or juniors** in ChE, ME, and Engrg are welcome to stop by the Placement Office to arrange an interview appointment.

**Science Infiltrates Media**

The American Association for the Advancement of Science announces the continuation of a program to support advanced students in the natural and social sciences and engineering as intern reporters, researchers, and production assistants in the mass media for the summer. Fellows will have the opportunity to observe and participate in the process by which events and ideas become news and improve their communication skills by learning to describe complex technical subjects in a manner understandable to the public. Deadline for receipt of applications is February 15, 1981. For information please contact the Placement Office, Room 8, Dabney Hall.

**Environmental Intern Program**

The program is a short-term paid professional opportunity for upper-level undergraduate and graduate students interested in environmentally-related fields. A representative will be on campus February 10, 1981 to give an informal informational meeting. Interested students should contact the Placement Office, Room 8, Dabney Hall, for further information. Deadline for applications is March 2, 1981.

**Error in Catalogue**

Contrary to the catalogue, Lit 8 (The Self in Literature) will be taught in the third quarter.

**Money For Women**

The Livermore-Pleasanton Branch of the American Association of University Women (AAUW) is sponsoring a scholarship for women residents of the Livermore-Ardmore Valley, who have demonstrable financial need and who will be juniors or seniors in 1981-82. For further information and an application, send a "stamped, self-addressed long envelope" to: Mrs. Janet Pfeifer, AAUW Scholarship Committee, 2024 Westbrook Lane, Livermore, CA 94550. Do it now. Deadline for completed applications is March 1.

Also, the Women's Auxiliary of the American Council of Independent Laboratories is sponsoring a scholarship for women who meet the above criteria; major is restricted to Physics, Engineering, Chemistry, Geology or Biology. An outline of the application requirements is available in the Financial Aid Office. Deadline is March 15.

**Lost!**

1 large set of keys on plain steel ring. Please contact Cliff at x6807 or 793-8414.

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**VOCALIST WANTED:** Caltech rock band needs Caltech undergrad to sing sizzling, screaming rock & roll. Must be able to practice some weeknights in the Jam Room and make occasional concerts at the Forum. Dial 793-7882/577-8377.

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Buying or selling something? You, too, can take out an ad in *The California Tech!* The cost is \$2 per inch plus 30¢ per extra line for Classifieds. Bring ad copy to the Tech office or call 356-6154. OK?

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