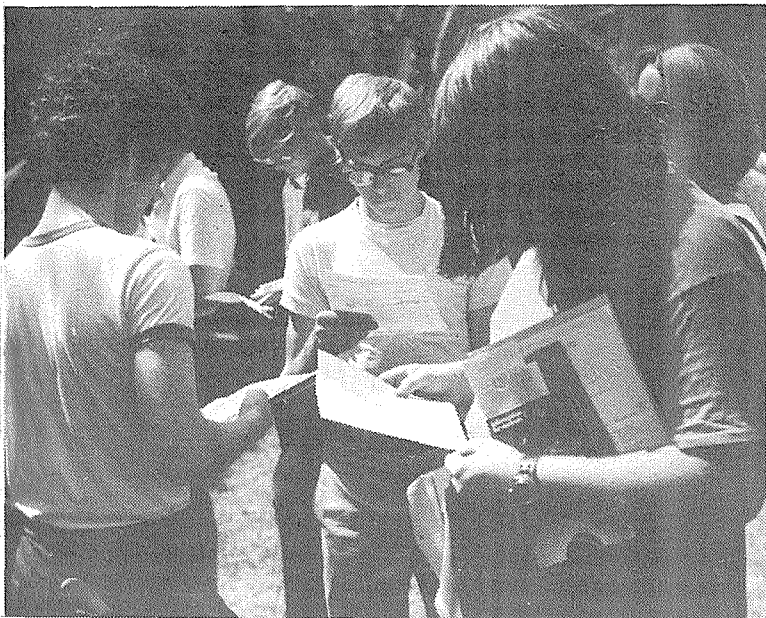


## Frosh camp Again — and a good time was had by all



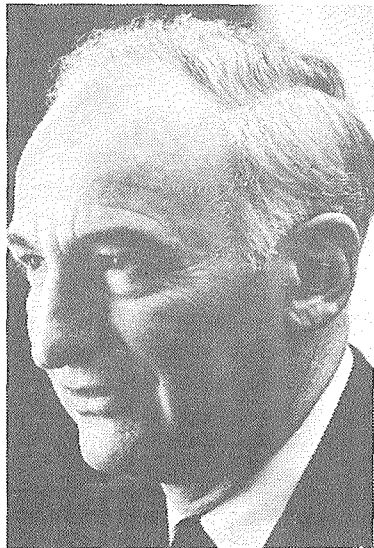
**BEFORE**—Incoming Freshmen study their sheets for some inkling of how to behave. Of course, little hint was given them by the Institute's instructions.

## TRW Head Simon Ramo Teaches Business Course

By Etain Schroedlu

One of Caltech's best-known alumni, Dr. Simon Ramo (PhD '36), will be teaching a course at Tech this year on technology and business. Dr. Ramo, a trustee of Caltech, is Vice-Chairman of the Board of TRW, and is one of the founders of that company (the "R" in TRW is for Ramo), which is one of the largest technological corporations in the country. TRW had sales of \$2.6 billion in 1975, and ranked 71st in the *Fortune* 500 largest U.S. firms.

The course is BEM 100, and Dr. Ramo will be teaching the winter quarter. The fall quarter will be taught by David Morrisroe, Caltech vice-president for financial affairs and treasurer, and will emphasize the principles of investment, managerial accounting, and finance. This part of the course is not explicitly required for the following parts, but it is strongly recommended, as the later parts of the course will assume familiarity with the material covered in BEM 100a.



Dr. Simon Ramo

(Students who have taken BEM 100a in the past should find their backgrounds to be sufficient.)

Dr. Ramo will organize his course around lectures and readings from the point of view of the problems faced by technologically trained persons

Oceaning was one of the more popular sports at this year's freshman camp. Frosh, upperclassmen, and even faculty were not exempt from an unexpected dip. Walt Meader, Dr. Ned Munger, Louise Kirkbride, Dr. David Wales and Haywood Robinson were among the victims.

Pranks like these were just one facet of this yearly program. The incoming freshmen heard talks and held discussions on a variety of subjects. Commander Bert's talk on student life compared Caltech to a smorgasbord—you can do what you like and as much as you like. Harry the Horse gave an enlightening talk on his research. He was assisted by Acting President Christie and Dr. Jenijoy LaBelle. It was translated into Russian by Dr. Valentina Zaydman. The honor system was discussed by Chris Sexton. Dr. J. Kent Clark's of the Caltech Stock company spoke on aggravation, monotony and fatigue at Caltech. Flora Boyer led a series of talks on extracurricular activities. Small discussion groups clarified these talks.

This busy schedule still left time for recreation. Volleyball, softball, swimming, rowing and hiking were popular. There was also sailing, although there was usually a line waiting to use the one boat. Dr. Jay Melosh led a geology field trip on which he discussed the geological history of Catalina Island. This was followed by a pebble hunting and identifying session. Dr. Wheeler North led a marine biology field trip, during which he pointed out many marine

species, including a small shark.

All this exercise made people work up a big appetite. This appetite was aggravated by such delectable delicacies, such as congealed stew and meager bologna sandwiches. They made Institute food look good.

This exercise should also have made people sleepy. However, sleeping was not one of the more popular activities. Those who did attempt to sleep were generally unsuccessful. Midnight poker and chess games kept many awake. Others were awakened in the early morning hours by a refreshing bucket of water thrown by certain unnamable faculty members.

Both evenings were filled with activities. On Thursday, the Pink Panther returned (on screen). On

Friday, Eric Kaler had his twenty-first birthday, and was greeted by Dr. LaBelle in the traditional manner.

On Friday was the talent show. Olaf Frodsham directed a choral group in several songs. "Fidget the Midget," a skit by Eric Sirri and Chris Sexton, was about the adventures of a midget. Several people played pieces on the piano or guitar. The Lloyd house singers gave a stirring rendition on life at Caltech. Dr. Jenijoy LaBelle read a poem, "I Knew a Woman," by Theodore Roetke. A late entry, an unknown freshman, gave a dramatic interpretation of Yertle the Turtle, by Dr. Suess.

All in all, it was a fun three days.



**AFTER**—After Freshman camp, these frosh have clearly caught on to the proper way to behave.

Photo—Al Kellner

As thrilling today as it was 2000 years ago

## Spectrum to open with "Electra"

The play depicts murder, revenge, brutality, debates the role of Law and Order and centers about a fanatical not-so-young woman. Sounds like something someone might have written quite recently, doesn't it? Well, actually, that's a description in a nutshell of *Spectrum Production 15*, the seldom-performed "Electra" by Sophocles. This thrilling play still

retains a great deal of impact, despite the fact that it was written in a culture most of us would find to be even more alien than the one that exists at Tech. Perhaps it has even more meaning to a modern audience than it did to the Greeks 2000 years ago, what with our historical perspective.

At any rate, this magnificent play will be presented in six performances in late October and early November (check the *Tech* Entertainment Calendar for exact dates and times) by Spectrum Productions, a Caltech-based "production cell" created by Professor Oscar Mandel dedicated to the production of the "unusual." Casting has been finished, with Janet Cattano as Electra, Iris Reaves as Clytemnestra, and Douglas Lance as Orestes.

As mentioned above, Spectrum Productions devotes itself to the unusual. This frequently means plays that have been around for quite some time but which have for one reason or another seldom seen the stage. This is true of "Electra," and the play is even a bit more unusual because of a few innovations introduced for the purpose of presenting it here at Caltech. In the first place, the traditional

chorus of fifteen has been reduced to three individual characters representing Placation, Agression, and History. Although they often share the same point of view, there are many times when they differ in point of view, and they only occasionally speak in chorus.

Another unusual aspect of this play is that while it is straight drama (tragedy, in fact), there is going to be a live orchestra featuring an original score by Gerald Fried, the Emmy award-winning composer who did "Roots," with Fried himself performing and with Caltech's own Phil Engelauf on multiple percussion for all performances.

The cast consists of nine people, including four veterans of previous *Spectrum Productions* at Ramo, one who went with the company to Switzerland last summer but has not yet performed at Ramo, and four newcomers to the company.

Shirley Marneus is directing the play, as she has past *Spectrum* plays.

Tickets are on sale now and can be purchased at the Caltech Office of Public Events, on the northeast corner (more or less) of Michigan and Lura Streets.

### Tradition Broken

## Coffeehouse opens with foodservice

With spotlights blazing from the front lawn and the second-story windows, the Coffeehouse defied tradition (at least the tradition of the last four years) and opened the same day as did board contract. Yes folks, the Coffeehouse is once again open for business. For those of you as yet unacquainted with the Coffeehouse, it is located on San pasqual, the second building on the north side east of Wilson, at the sign of the turtle. Once you find the place, assuming it's between nine in the evening and two in the morning, you can

buy such things as hamburgers, hot dogs, soft drinks, ice cream concoctions, orange juice, tea, bagels and a host of other goodies. Of particular note are their sundaes and tuna sandwiches; nowhere can you get more of either for as little money unless you fix it yourself. Prices are extremely low (the Coffeehouse, being run by ASCIT, is non-profit, which means that the cost of the food is only the cost of raw materials and labor, no markup for profit.

Speaking of broken traditions, as you may have realized already

(unless your time sense has already been shot to hell by Caltech), the *Tech* is now a twice-weekly publication. That means that we can use even more staff than our already unbelievable 18 (yes, we do actually put out this rag with only 18 people on the staff), and no experience is necessary. The offices are located on the first floor of Winnett and are open about 18 to 20 hours a day at random intervals. Come on by and talk to someone, and let them convince you that working for the *Tech* really is worthwhile.

# Calendar

*Gethsemane Springs*, Mark Taper Forum, 135 North Grand Avenue, Los Angeles (972-7211). Plays from September 29 through October 16.

*Hold Me*, Westwood Playhouse, 10886 Le Conte Avenue in the Contempo Westwood Center (477-2424).

*War Babies Improvisational Group*, Cast Theatre, 804 El Centro Avenue in Hollywood (469-7010). Wednesday evenings at 8:00 through December 10.

*A Woman's a Woman*, Synthaxis Theatre Ensemble, Scott Church, 444 North Orange Grove in Pasadena (441-2835). A production of the Avant-Garde Proletariat. Friday and Saturday evenings at 8:00 through October 15.

*Screen Play*, The Cast Theatre, 804 North El Centro, Hollywood (980-2740). Runs through October 2 with performances at 8:30 pm Thursday through Saturday and Sunday evenings at 7:30.

*Tom Jones*, The Aghape Players, 231 Golden Mall South, Burbank (846-7897). An elegant, hilarious comedy of love and debauchery based on the novel by Henry Fielding. Runs through November 6, Thursdays through Saturdays at 8:30 pm and Sundays at 7:30 pm. Opens September 29.

*Psychology and Therapy Film Series*, The Royal Theatre, 11523 Santa Monica Boulevard, West Los Angeles (478-1041). A series of films covering all aspects of psychology and therapy from the story of C. S. Jung to theories of how right- and left-handedness affect prejudices and values. The series runs Sundays at 11:00 am and 1:00 pm through November 20.

*The RKO Years—Major Film Retrospective*, Los Angeles County Museum of Art, Leo S. Bing Theatre, 5905 Wilshire Boulevard (937-4250). A collection of the major RKO films of the '30's, '40's and '50's. Through October 1.

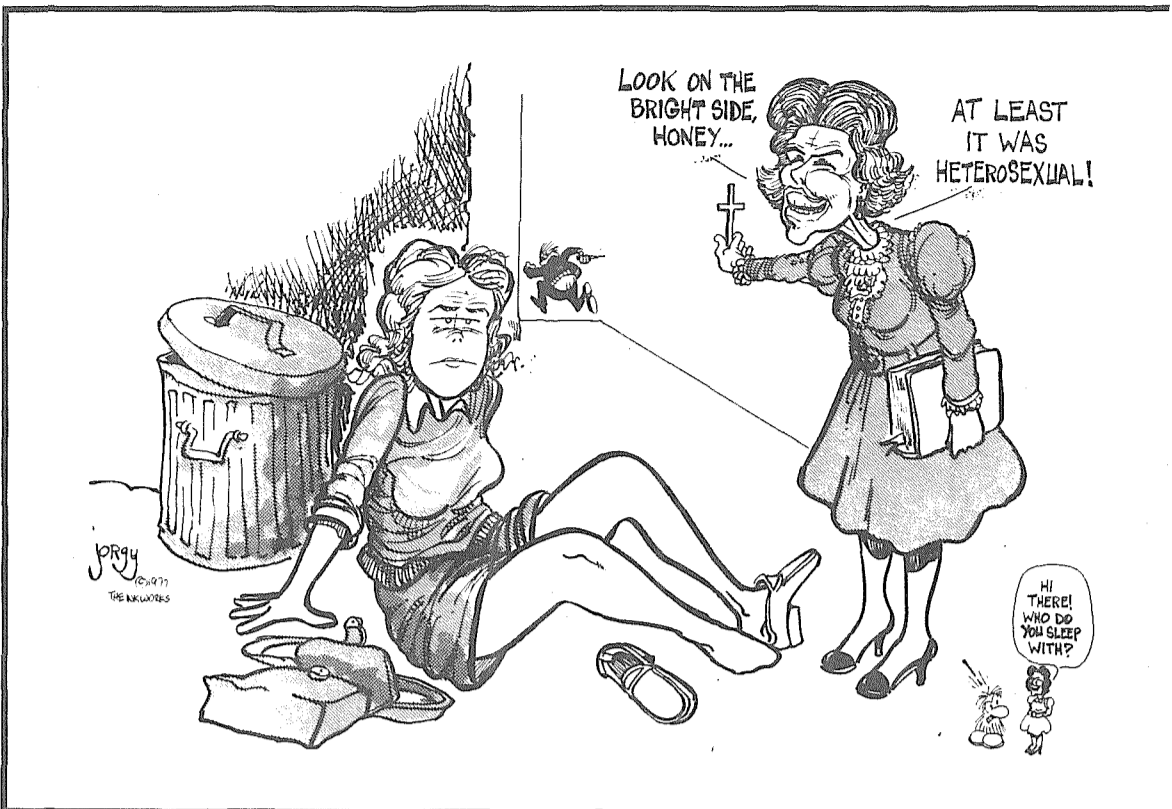
*The American Film Institute Tenth Anniversary: A Program of Films From the AFI Center for Advanced Film Studies*, Leo S. Bing Theatre, Los Angeles County Museum of Art, 5905 Wilshire Boulevard (937-4250). A collection of short films shown Sundays through October 23 at 1 pm.

*Hello People & Bob Ward*, The Ice House, 24 North Mentor Avenue in Pasadena (681-9942). Comedy and Music through October 2.

*Pure Prairie League*, The Roxy, 9009 Sunset Boulevard (878-2222). Through Wednesday followed by Cate Brothers on Thursday only.

*Seals & Crofts*, Greek Theatre, 2700 North Vermont Avenue in Los Angeles (660-8400). September 29 through October 1 at 8:30 pm.

*Thin Lizzy & Graham Parker and the Rumour*, Santa Monica Civic Auditorium, Pico and Main in Santa Monica (393-9961). Thursday only at 8:00 pm.



# COMMENTARY

Dear Sirs:

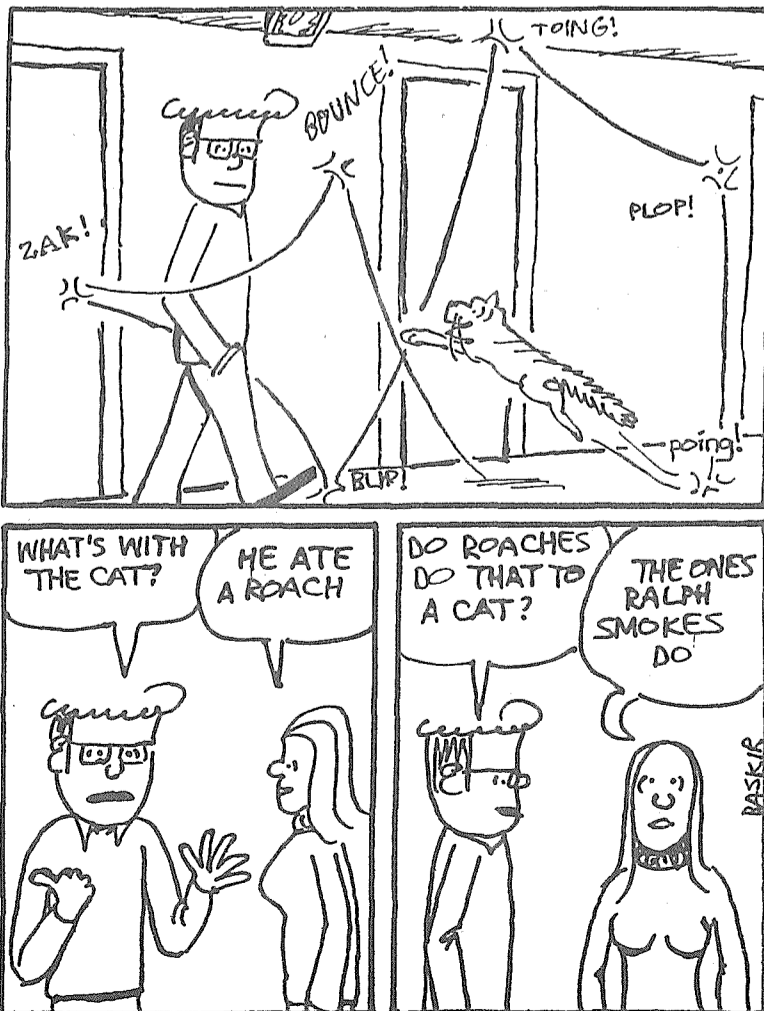
I must take strong exception to Dick Beatty's article on dining and nutrition which appeared recently in the *Tech*. While he does make a few good points, the article is riddled with inconsistencies and simple cases of ignoring the facts as they apply to a large number of Techers. For example, at one point he suggests an instant breakfast product as one possibility for a third meal on weekdays, and in the next paragraph cautions the reader to "Eat genuine food, not preserved junk." Come on Dick, I've never seen a package of instant breakfast growing on a farm or sitting in the fresh produce section of the supermarket. Among the chemicals Dick refers to are various preservatives (many of which occur in natural foods, sometimes in greater quantities than in pro-

cessed foods). The idea here is that if a foodstuff is not available in a quantity that will be consumed in only one or two meals, the natural food will have to be thrown out, whereas the processed food will not. Frozen vegetables in general will taste better and fresher than so-called "fresh" vegetables" which have been sitting around for more than a day or two between the time they are harvested and the time they are consumed. Perhaps Mr. Beatty would be "surprised and grossed out" to realize that the fact that a number of chemicals are added does not amount necessarily to a very large amount on an absolute scale, in fact far less than the amount of impurities produced in the past by such things as mold.

Finally, I must point out that

Beatty is hardly in a position to judge the quality of the restaurant reviews published by the *Tech* in the past, as he was the author of them. In general, he had the problem of describing places either too far away or too expensive for the average *Tech*er following Beatty's advice to "Eat out frequently."

Carl J Lydic



## Burger Continental says

### Do you really want to eat

- Grilled Ham Steak
- Beef Enchiladas
- Cottage Cheese w/Pineapple
- Sundae Bar

### tonight?

We don't blame you. Get out of the food service rut and come over to Burger Continental for some real food.

## Caltech's Burger Continental

### the california TECH

Volume LXXIX Number 1  
Thursday, September 22, 1977

Published twice-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 the views of the editors or the corporation.

**Editors-in-Chief**  
Al Kellner  
Sandy McCorquodale

**Managing Editors**  
Gregg Brown  
Henry Fuhrmann

**Business Manager**  
Kevin Drum

**Writers**  
Dick Beatty, Cheri Erickson, Tom McCabe, David Ritchie, Brett Van Steenwyk

**Photographers**  
Dave Wheeler [Publications Darkroom Chairman], Ed Bielecki, Chris Wheeler

**Production**  
Flora Boyer, Stan Cohn, Nick Smith

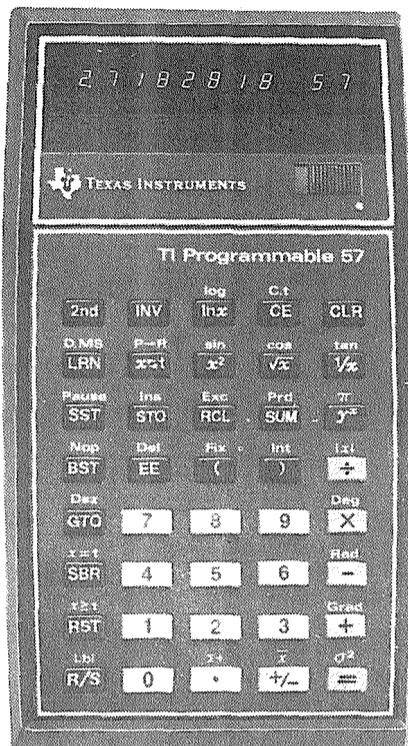
**Circulation**  
Carl Lydic [Chief], Alan Boyer, Bill Gould

The California Tech publications offices are located in Winnett Student Center (107-51), California Institute of Technology, Pasadena, CA 91125. Telephone: 213-795-6811, Editors—ext. 2153, Business Manager—ext. 2154. Printed by News-Type Service, 1506 Gardena Avenue, Glendale, CA. Second-Class postage paid at Pasadena, CA.

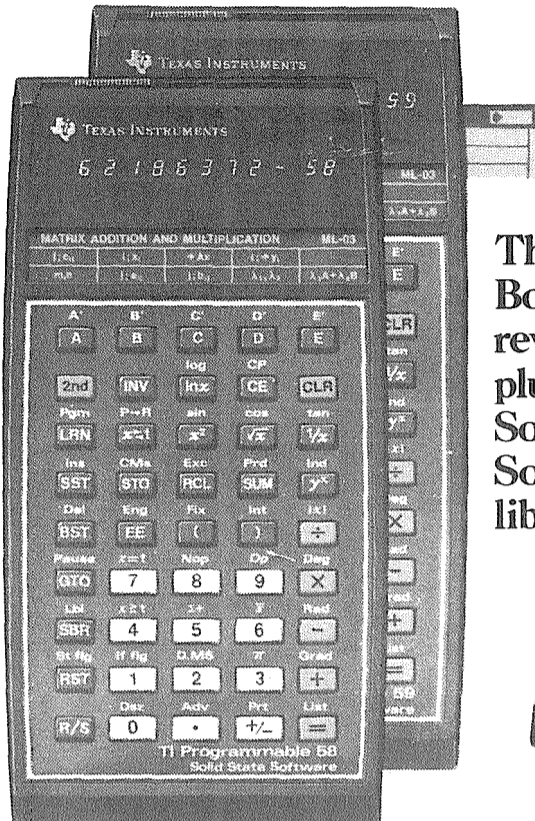
**Subscriptions**  
term—\$1.50  
year—\$4.00  
life—\$100

# This is the semester to get your programmable.

**The TI-57.**  
Its self-teaching system gets you programming fast.



**The TI 58 and 59.**  
Both use revolutionary plug-in Solid State Software™ libraries.

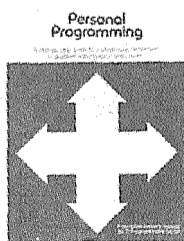


**TI Programmable 57.** The powerful superslide rule calculator you can program right from the keyboard. Comes with an easy-to-follow, self-teaching learning guide—over 200 pages of step-by-step instructions and examples. Quickly learn the value of making repetitive calculations at the touch of a key. Recall entire instruction sequences. Display intermediate results at any point in a calculation. Eight multi-use memories provide addressable locations to store and recall data. Program memory stores up to 150 keystrokes (50 program steps). Editing too: Singlestep. Backstep. Insert or delete at any point in a program. Also a powerful slide rule calculator with logs, trig functions and advanced statistics routines.

**\$79<sup>95</sup>\***

**The TI-58 and TI-59 combine three major innovations to bring the power of programming to you—even if you've never programmed before:**

1. Extraordinarily powerful—at remarkable low prices.
2. Revolutionary plug-in modules put complex formulas to work at the touch of a key.
3. Step-by-step learning guide that takes you from the basics of programming through advanced programmings—language you can understand.



**TI Programmable 58.** Up to 480 program steps, or up to 60 memories. Master Library module contains 25 prewritten programs in math, engineering, statistics and finance. Also increases number of steps—up to 5000. Library programs may also be addressed from the keyboard or inserted as subroutines. Can also be used with TI's new PC-100A printer/plotter. It lets you plot, print headings and prompt—messages.

**\$124<sup>95</sup>\***

**TI Programmable 59.** More powerful than the TI-58. Up to 960 program steps or up to 100 memories. Magnetic cards store up to 960 steps. And, record and protect custom programs. Also 10 user flags, 6 levels of subroutines. 4 types of branches.

**\$299<sup>95</sup>\***

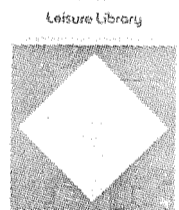
**Optional Libraries.** Applied Statistics, Surveying, Real Estate/Finance, Aviation, Marine Navigation. \$35.00\* each.

## FREE.

**When you buy a TI Programmable 58 or 59 you can get this 19-program Leisure Library.**

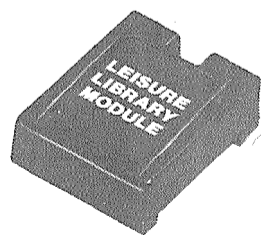
**A \$35.00 value if you act now.**

**Football Predictor.** Forecast score, point spread. **Bowling Scorekeeper.** Track 90 bowlers. **Golf Handicapper.** Update handicap from latest round's score. **Bridge.** Computes points from tricks made and bid. **U.S. Chess Federation Rankings.** Wins, losses, draws. **Codebreaker.** 3,024 possible codes make this a unique challenge. **Black Jack.** **Acey Ducey.** **Craps.** **Mars Lander.** Pilot to a safe landing. **Jive Turkey.** Guess mystery number—tells you if you're high or low—but is it jiving you? **Nim.** Play the machine, each time it gets better. **Sea Battle.** 15 missiles to sink sub. **Quarterback.** Call plays. **Photo 1.** Compensate for change in photo enlargement magnification. **Photo II: Fill-in-flash.** Computes correct lens f-stop in strong ambient light. Use it with a PC-100A and have even more fun. **Computer Art.** Hangman. Put in a word, second player guesses or hangs. **Memo Pad.** Write, enter messages. Print and record them on 59's mag card. Use the card to replay the message. **Biorythm.** Plots all three cycles.



Leisure Library comes with: Plug-in module. Library manual. Quick reference guide. Label cards. Library wallet.

**Offer good from August 15 to October 31, 1977. Here's what you do.** Fill out this coupon. Return it to TI with your serialized Customer Information Card (packed in the box), along with a copy of a dated proof of purchase showing the serial number. **Important.** Your envelope must be postmarked no later than October 31, 1977.



Leisure Library Offer  
P.O. Box 53, Lubbock, Texas 79408

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

Zip \_\_\_\_\_

TI 58 or 59 Serial Number \_\_\_\_\_

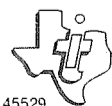
(from back of calculator)

Texas Instruments reserves the right to substitute software libraries of equal value based on availability. Please allow 30 days for delivery. Offer void where prohibited by law. Good in continental U.S. only.

\*Suggested retail price.

©1977 Texas Instruments Incorporated

**TEXAS INSTRUMENTS**  
INCORPORATED



45529

# For Your Eyes Only

## Techies

Attention!!!

Do you like to see movies? Hear concerts? See plays and hear live opera? If you do then the Tech needs you! Anyone who would like to partake in the G&C offered by the Tech is welcome to it. All we ask is that you write us a short review of the event. If you are interested stop by the Tech offices in Winnett Center or call David Ritchie at 449-8387.

\*\*\*\*\*

Caltech will offer classes in Classical and Flamenco Guitar with guitarist, Darryl Denning. Classes will meet in Fleming Music Room on Tuesdays beginning October 4 with the Beginning Class at 4:30 P.M. and the Intermediate Class at 5:30 P.M. Classes are free of charge and are open to Caltech students. Other members of the Caltech community may be admitted with the approval of the instructor. Private instruction can also be arranged with Mr. Denning. For further information please call 650-1692.

\*\*\*\*\*

The Caltech Wind Ensemble and Jazz Band will begin their 1977 seasons of musical activities with rehearsals and organizational meetings on the evening of Thursday, September 29, 1977, in the basement of Beckman Auditorium. The Wind Ensemble will meet from 7 to 9 pm and the Jazz Band from 9:15 to 11 pm. Rehearsals thereafter will be held weekly on Thursday evenings at the above time and place.

Also, a "jam session" and jazz improvisation class will be held on Thursdays from 5 to 6 pm in the basement of Beckman Auditorium.

Membership in either organization is available to all members of the Caltech/JPL community, as well as their family members and friends.

Those desiring additional information may contact the director of the Wind Ensemble, Jim Rotter, or the director of the Jazz Band, Bill Bing, through the office of the Director of Student Relations, 105-51, or extension 2157.

Professor Mac Pigman, room 301C Baxter Hall, Ext. 1062, can teach Latin and Greek, beginning or advanced. Anyone interested should contact him.

\*\*\*\*\*

It's not too early to think about:

- Employment
- Research Fellows
- PhD Candidates
- Grad Wives
- Part-time
- Work-study

This and much more is offered to you by your Placement Office. Drop by and see us. We are located in the basement of Dabney Hall, room 8. Office hours are from 8:00 am to 5:00 pm.

\*\*\*\*\*

Ursula Hyman-Kelley would like to welcome the Caltech Freshmen to campus and to invite them by the financial aid office if they have any questions concerning financial aid at Caltech.

The financial aid office is now in its new quarters at 208 Dabney Hall and may be reached by phone at campus extensions 2280 and 2284.

\*\*\*\*\*

True connoisseurs of the naval arts will appreciate the arrival of Diane Webbhr's Belly Dancing group.

An outstanding display of form and torso will be on the quad at noon this Friday, September 30, and attendance is highly recommended so that you can recharge your batteries one last time before the coming year.

Brought to you by the Y, people really interested in serving you.

\*\*\*\*\*

UCLA will conduct a course on the Caltech campus to which all Caltech students are eligible to attend for credit at no charge.

This is a regular upper division UCLA course, under the general title of *Ancient Civilizations of Andean South America*.

This will be given on Wednesday evenings from 7 to 10 om in Baxter Lecture Hall. The first class will be on October 5 and will go through December 7.

Students wishing to take the course need only come to the first course and sign up there.

Brochures will be available in 228 Baxter.

The placement Office is again this year presenting two seminars on "How to Approach Getting a Job." They will be held on October 11 and October 13. More information will be given at a later date.

## Announcements

Students planning on submitting verse to the National Poetry Press's College Poetry Review should do so before November 5. There is no limitation to theme or form, but shorter works are preferred because of space limitations. Each poem should be typed or printed on a separate sheet, and must bear the name, home address, and college address of the student. Send manuscripts to the Office of the Press; National Poetry Press; Box 218; Agoura, CA 91301.

\*\*\*\*\*

The Los Angeles Philharmonic has extended an invitation to college students interested in promoting the cause of classical music to become Student Representatives of the Philharmonic. The purpose of the Student Rep program is to publicize a special student subscription rate for the Philharmonic's winter series at the Music Center Pavilion and establish a network on each campus to readily experience the Los Angeles Philharmonic's concerts.

Anyone interested in participating as a Student Representative should contact Lydia Clarke, Student Coordinator, at 972-7200. x813, for more information.

\*\*\*\*\*

David McCharen, mime, and Alchemedia, a mini-circus featuring tightrope dancing, juggling and acrobatics will participate in the Autumn Festival on October 1 and 2 in Farnsworth Park at the corner of North Lake and Mt. Curve in Altadena. For information, contact Richard Dedeaux or Donald Whitehead at 795-5891 or 681-1154.

Any individuals wishing a complete set of instructions for "meditation" together with a list of "secret" mantras and a description of how they are assigned can obtain them without obligation of any kind by sending a self-addressed envelope (preferably about 10" wide) to: Meditation; Webster College; St. Louis, MO 63119.

\*\*\*\*\*

Join the Los Angeles Philharmonic in their search for the most creative Student Subscription logo design for the 1978-1979 season at the Music

Center.

In order to enter, submit your design reading "Los Angeles Philharmonic—Student Subscribers" to the Student Subscription Coordinator by February 1. Winners will be announced in late February. Dial 972-7200 extension 813 for further detail.

## For Sale

Add technology to your life! Make my Heath GR-180 Color TV work again! Yours for a mere \$50. May need new CRT. Martin Ewing, x 1970.

**AIRE-LITE ELECTROLYSIS**  
**PERMANENT HAIR REMOVAL**  
 Eyebrows Shaped — Facial & Body Work  
**ADVANCED TECHNIQUES FOR MAXIMUM COMFORT**  
 Compl. Consultation — Complete Privacy  
 Physicians' References

Lake and California Pasadena 792-4046  
 by appointment

**ROMA GARDENS**

**BEER & WINE**  
**ITALIAN CUISINE**

PIZZA SPAGHETTI RAVIOLI

OPEN 5-11 p.m. Sun-Thurs  
 5-12 p.m. Fri-Sat

Now open for lunch 11-2. Buffet lunch \$2.95. All you can eat Thursdays for \$4.25

10% off on italian food to all CIT students (buffet lunch excepted) 7 days/week

Use new back entrance for picking up orders

1076 E. Colorado 449-1948

**Why Should I Subscribe to the Tech?**

It's cheaper than going to Hawaii.

You can't argue with that. A dollar-fifty buys you a term's worth and for four dollars we'll keep them coming all year. Make checks payable to the *California Tech*.

Second-Class Postage paid at Pasadena, California. The *California Tech* is published twice 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, CA 91125.

The largest selection of hard aluminum MEASURING TOOLS in the country!

**FAIRGATE**

STRAIGHT EDGES/T-SQUARES  
 METRIC RULES/L-SQUARES  
 CENTERING RULES  
 TRIANGLES/CURVE STICKS  
 INKING RULES  
 and many others...

See them at your Bookstore!

**COLLEGIATE RESEARCH PAPERS**

**HELP!**

**RESEARCH Assistance ALL SUBJECTS**

Choose from our library of 7,000 topics. All papers have been prepared by our staff of professional writers to insure excellence. Send \$1.00 (air mail postage) for the current edition of our mail order catalog.

**EDUCATIONAL SYSTEMS**  
 P.O. Box 25916-E,  
 Los Angeles, Calif. 90025

Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_  
 State \_\_\_\_\_ Zip \_\_\_\_\_

We also provide original research -- all fields. Thesis and dissertation assistance also available.