

We real cool. We  
Left school. We  
Lurk late. We  
Strike straight. We

# THE CALIFORNIA TECH

Sing sin. We  
Thin gin. We  
Jazz June. We  
Die soon.  
—Gwendolyn Brooks

VOLUME 85

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NUMBER 28

## Vote To Be Held On Waited Meals

On Monday, May 14, there will be a vote concerning the style of Food Service next year. It has become clear that there are differences between the waited and non-waited styles of service beyond simple cost considerations. Following is a summary of the two services submitted to the Food Service Committee by Servomation that we feel may be taken as representative and will hopefully enter into your decision on Monday.

"As requested by the food committee at our meeting on April 25, 1984, Servomation is submitting the following figures for two food service plans.

Plan #1—Same style of meal service that is presently being offered. Cafeteria style lunch and family style dinner.

Plan #2—A slightly different style of meal service  
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**SPORTS DAY:** Chris Brennan and Behzad Sadeghi collide as they go for the ball.  
Photo by Min Su Yun

## Five Profs to N.A.S.

Attardi, Berg, Cohen, Goddard, and Stone

Caltech News Bureau

Five members of the Caltech faculty have been elected to the National Academy of Sciences this year in recognition of their "distinguished and continuing achievements in original research," it has been announced at the Academy in Washington D.C.

In this year's elections, only two other institutions, Harvard and Yale, had five faculty members elected to the Academy. The election of the five Caltech faculty members brings to 59 the number of NAS members at Caltech. The Academy, founded in 1863, is a private organization of scientists and engineers charged with acting as an official adviser to the federal government. Election to the Academy is one of the highest honors that can be bestowed upon a scientist.

Caltech faculty members elected are Giuseppe Attardi, professor of biology; Howard C. Berg, professor of biology; Marshall H. Cohen, professor of radio astronomy; William A. Goddard III, professor of chemistry and applied physics; and Edward C. Stone, professor of physics.

Dr. Attardi studies gene expression in human mitochondria. These tiny structures within the living cell are the power plants of the body, producing energy-rich molecules that drive metabolic processes. Dr. Attardi received his M.D. from the University of Padua, Italy, and came to Caltech in 1959 as a research fellow.

Dr. Berg investigates the mechanisms of bacterial motion. His research aims at understanding how the "motors" of bacteria operate to twirl their tail-like flagella to propel them through their fluid environment. Dr. Berg received his BS from Caltech and his MA and PhD from Harvard University, and returned to Caltech in 1979 as a professor of biology.

Dr. Cohen uses the techniques of radio astronomy to study the structure of quasars,

incredibly bright objects at the edge of the observable universe. For example, his observations seek to explain the mechanisms by which quasars emit intense beams of matter and energy millions of light-years long. Dr. Cohen received his PhD from Ohio State University and came to Caltech in 1965 as a visiting associate professor. He is also executive officer for astronomy at the Institute.

Dr. Goddard is developing theories to explain some of the basic mechanisms of chemical catalysis, reactions on metal and semiconductor surfaces, and biological oxidations. Such studies are important, both to chemists trying to understand the basic nature of chemical reactions, and to industry, where catalysts are important to the efficient production of a wide variety of chemicals. Dr. Goddard received his PhD in engineering science from Caltech and joined the chemistry faculty as an Arthur Amos Noyes Research Fellow in 1964.

Dr. Stone has concentrated his research on planetary magnetospheres and solar and galactic cosmic rays. Cosmic rays are streams of high-energy particles bombarding the earth that are blown out exploding stars, swept up by the blast from those explosions, or erupted from the surface of the sun. He is project scientist on the Voyager mission to the outer planets. Dr. Stone received his PhD from the University of Chicago in 1963, and came to Caltech in 1964 as a research fellow. He is also chairman of the Institute's Division of Physics, Mathematics and Astronomy.

In addition to the Caltech faculty members, also elected to the Academy this year was chemist Robert G. Bergman, currently a Sherman Fairchild Distinguished Scholar at Caltech. Dr. Bergman, a longtime Caltech faculty member, is now at U.C. Berkeley.

## Asteroid Named San Diego

Caltech News Bureau

A three-mile-wide asteroid orbiting the sun millions of miles from earth has been named for the City of San Diego by appreciative astronomers from Caltech's Palomar Observatory. San Diego is one of only a few cities in the United States honored by having a celestial body named for it.

The designation of the asteroid was announced last week by Caltech President Marvin L. Goldberger in a ceremony at the Reuben H. Fleet Space Theater and Science

Center in San Diego. Deputy Mayor Mike Gotch, a leading advocate of a city street lighting policy favored by astronomers, received a commemorative plaque depicting the asteroid on behalf of the city.

The official citation naming the asteroid has been submitted to the Smithsonian Astrophysical Observatory, which catalogs such objects for the international astronomical community. This citation reads:

*Asteroid San Diego—discovered by Eleanor F. Helin September 20, 1982 at Palomar Observatory of the California*

*Institute of Technology. Named as a celestial tribute to the City of San Diego in appreciation of the city's responsiveness and cooperation in the campaign to restore dark skies for astronomers probing the universe.*

On February 6, the San Diego City Council voted to install low-pressure sodium street lighting throughout the city, in part to aid astronomers at Palomar Observatory and San Diego State University's Mount Laguna Observatory. Such lighting can be largely filtered out of astronomical observations, allowing them to proceed with less obstruction. Without the commitment from San Diego, Palomar's role as a major observatory would have been severely degraded.

Asteroid San Diego is a relatively bright object at a maximum brightness of magnitude 15, but it is still  
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### Commentary

## Star Wars at JPL

by Michael Chwe

In the JPL section of the Caltech phonebook, under "Defense Programs Office," is listed the "Talon Gold Project."

What is the "Talon Gold Project"?

On March 23, 1983, President Reagan, in a televised address to the nation, proposed that American scientists begin research on a "program to counter the awesome Soviet missile threat with measures that are defensive." Such a system would destroy Soviet ballistic missiles in flight, and would include laser-beam weapons. Recently Lt. Gen. James A. Abrahamson was named to head the "Star Wars" project. The Pentagon plans to spend \$26 billion on the project over the next five years.

The ballistic missile defense system would become operational in twenty years, would cost between 250 billion and one trillion dollars. The system

would ostensibly lead to improved arms control, and would also guarantee the security of the Western Alliance.

A laser beam weapon as part of such a system would require sensing, tracking, and aiming capabilities unattainable with current technology. The Talon Gold project, a research program of the Defense Advanced Research Projects Agency, will develop the means to track and point a high energy laser beam very accurately at a distant target, moving at high speed. The project is worth several hundreds of millions of dollars to the Lockheed Corporation, who will build a device to demonstrate such a capability, using a low power laser.

The ballistic missile defense system seems to be a purely defensive safeguard against a Soviet nuclear attack. However, critics emphasize  
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## Symposium on Responsibility

The Caltech Y and the Mark Taper Forum will present a symposium titled "Ignorance is No Longer Bliss (The Genius: Art and Science, the Responsibility of Knowledge)" Monday, May 14 at 8:00 pm at Caltech's Ramo Auditorium. Admission is free.

The symposium will bring together representatives from the fields of science, the humanities and the arts to discuss issues raised in Howard Brenton's "The Genius," an American premiere production playing at the Mark Taper Forum through May 20. Brenton asks questions and

poses challenges on several levels. His central character, Leo Lehrer, is a mathematician who discovers an equation which could have monstrous ramifications in the nuclear age. Should Lehrer (or any scientist) be responsible to society for the potential consequences of this knowledge? Does art have a responsibility to inform society of the possible disastrous applications of this discovery? Does society, once informed, have the responsibility to act accordingly? Can anyone today remain blissfully ignorant of the world around them?

The symposium will be moderated by Harry B. Gray, the Arnold O. Beckman professor of Chemistry at Caltech. The panelists include: Marshall Cohen, professor, radio astronomy, Caltech; Brian Barry, Edie and Lew Wasserman professor of philosophy, Caltech; Betty Ann Kevlis, science writer, *Los Angeles Times*; Ben Levit, director of "The Genius" at the Taper; Jerome McGann, Doris and Henry Dreyfuss professor of the Humanities, Caltech; and Russen VaNdenbroucke, Taper literary manager.  
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## Food Service Vote on Monday

from page 1

which includes the same cafeteria style lunch and a staggered time cafeteria style dinner. Our intent with a staggered time cafeteria style dinner is five fold.

1. *Serve each house separately at ten minute intervals*, so that the house members still have the opportunity of sharing their evening meal together and having house announcements.

2. *Provide a wider selection of foods* to meet the needs of more students. We plan on doing this by offering the same menu plan we have now; 2-entrees, 1-starch, 1-vegetable,

salad, rolls, dessert and beverages plus a 3rd non-meat entree to meet the needs of the students that are vegetarians. The grill and salad bar will be available as it is at lunch and the dessert will include two or three selections rather than just one as it is now.

3. *Utilize batch cooking techniques to assure products* that are hotter, more appetizing, and fresher because they are "right from the oven, fryer, steamer, or grill" and don't have to stand on the steam table.

4. *Cost savings in food* because we eliminate the waste factor that is built into family style service, approximately a

3% savings. [3% of total costs, 14% of raw product cost]

5. *Cost savings in labor* because we can utilize student labor as servers in the serving line, steak cookers and dish washers but save the labor spent on bussing dishes and serving in the dining rooms.

The figures for the two styles of meal service are as follows:

Plan #1—Cafeteria style lunch \$3.21, family style dinner \$4.75; \$7.96/day, \$1353.20 for 170 days.

Plan #2—Cafeteria style lunch \$2.82, cafeteria style dinner \$4.21; \$7.06/day, \$1200.20 for 170 days.

[The per meal breakdown is always about 40-60 lunch-dinner, waited or unwaited dinners will not alter lunch service—AW]

## Notes

### Nominations for Junior and Senior Class officers

open Monday, May 14th and close the following Monday. The elections for these offices and for a number of amendments to the Bylaws will be held on Friday, May 25th.

### Election Results

**ASCIT Secretary**  
Joy Watanabe  
**BOC Secretary**  
Lisa Cummings

### Faculty-Student Committees

**Institute Programs** Mark Adams, Mark Lewis, Matt Penn, Kim Liu (Alt.); **Scholarships and Financial Aid** Praveen Asthana, George Gibbs, Brian Mapes, William Calahan (Alt.); **Housing** Rod Van Meter, Keith Bowman (Alt.); **Athletics and P.E.** Rod Van Meter; **Academic Policies** Keith Bowman, Mike DeKay, Mark Lewis; **Upperclass Admissions** Paul Graven, Rajeev Krishnamoorthy, Dave Watkins; **Grievances** Mark Adams, Brian Mapes; **Curriculum**

Anirvan Ghosh, Andy Wolf; **Relations With Industry** George Gibbs, Joseph Yang; **Foreign Students** Tetsuo Fukuchi; **Relations with Secondary Schools** Susan Sharfstein; **Health** Susanna Chan; **Library** Keneth Bell; **Art Advisory** Mark Adams; **Computer Advisory** Creighton Asato; **Patents** Rajeev Krishnamoorthy; **UASH** Susanna Chan, Anirvan Ghosh, Joy Watanabe, Christopher Chen (Alt.); **Frosh Admissions** Glen Crawford, Mark Lewis, Teresa Solberg, Joy Watanabe, Dave Watkins, Joe Cheng (Alt.), Warren Goda (Alt.).

## letters

### Getting off Board; Don't Steal

To the Editors:

As a member of the food service committee, I would like to inform you of what the food service committee does and also to convey to you a few messages from Servo.

The function of the food service committee is to be an official link between you, the student, and Servomation. This does not necessarily have to pertain to food or the quality thereof, but it usually does. In each meeting, we usually discuss the last week's menu item by item, commenting on each one, telling whether our house liked or disliked it, and if they disliked it, we tell how it could be improved. The food committee also discusses budget proposals, the manner in which the food is served, waiters, special meals, and other topics related to food service. Many of the improvements you have tasted have been made by the food committee.

One common question asked is, "How do I get off board contract?" There are five ways, currently, that I know of:

1. **Medical**—a written medical excuse from a doctor is usually needed.

2. **Religious**—a note from your clergy might be required.

3. **Quasi-religious**(read: vegetarian)—dinner only.

4. **Ath waiters**—see the MOSH

5. **Students living off-campus.**

To get off board see the Master. He's in charge of it.

First message from Servo: they would like all their dishes, glasses, silverware, etc. returned from the kitchens in the student houses. Before you leave for the summer, remember to return all those utensils, so they can take inventory; if you don't, guess who pays for it?

Second message: there have been complaints that people are taking more food than they can consume in one meal. I'm not sure who this complaint is directed at, but in my opinion you should take only the food you can consume that day (milk excepted). That means not storing up for the weekends. Also, if you are on a one-meal-a-day board contract, then it's not fair to take extra food from one meal and use it for other meals.

Respectfully submitted,  
—Chris Hull

### Bidding Opened for Food Service

To the Editors:

For the past several weeks a debate has been raging over who to hire as the food service for next year. At the end of second term, a vote was taken in some houses concerning the option of opening up the bidding. The known results were 97% in favor in Ricketts, 98% in favor in Ruddock, and Page voted 100% to open it up. During the last two weeks a petition was signed by half of Fleming, Blacker and Ricketts, and 95% of Page, requesting that the bidding be opened up. In addition, the owners of Burger Continental are requesting the opportunity to participate in the bidding. Burger Continental is asking for the support of the students.

Two points need to be considered. First, the student body will be voting on Monday as to whether we want waited or non-waited meals next year.

Although this is independent of the food company we select, the prices proposed by Servomation are being used as a reference for the price savings of non-waited meals. Servomation claimed the price difference would be *three percent (20 to 25 cents a day) but now states that it is a 90 cent difference. When questioned as to where the extra 70 cents came from, no real explanation was given.*

The other point which needs to be considered is BC. Several years back, Burger Continental was approached to be our food service. At that time, they were not interested. Now, BC would like to be our food service.

Any interested persons who would like to express their views are invited to write me at Page 1—53, or to call the house phone.

—George Chen

### Much Ado About Nothing

### Lack of Coverage Disappointing

To the Editors:

I was rather disappointed to see no coverage of *Much Ado About Nothing* in the *Tech*. If you did not have the manpower to send a reviewer, you could have printed the article which I submitted to you the week before. To judge from the turnout, this was an event of campus-wide interest which went unreported.

—Michael S. Pettersen

To the Editors:

I am greatly disappointed to see that there is no mention of the opening of *Much Ado About Nothing* in the *California Tech* of May 4th. Especially as there was no room in the four page issue the preceding week, although Steve Swanson had told you he was rushing photos to you and I brought the accompanying text. At that time, the photos and text were

accepted and arrangements made for complimentary tickets for your reviewer to the Sunday (April 29th) performance of the opening weekend. I was told that there would be a story in the issue of May 4th, with photos and a review.

What happened? Was everyone too hung over from that rock concert that could be heard all the way to the Salt Shaker on Arroyo the night before? Not even a line in the little Hey, ~~diddle~~ the cat and the fiddle boxes!

THIS IS A COMPLAINT... and a bitter one, at that. So far this year, not one show presented by T.A.C.I.T. has been reviewed by the *Tech*. We have presented two student-written shows (there is one more to come), a small musical directed by Don Caldwell, an English-

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### The Caltech Y Fly-by

Friday... May 11

Noon Concert—The New Marines, on the quad. Something really special.

Saturday... May 12

Mt. Baldy Hike leaves at 8 am.

Renaissance Pleasure Faire—The Y will provide transportation today only, but tickets are available at the Y for 3 dollars, and are good for any weekend until June 10.

Monday... May 14

"Ignorance is no longer bliss: The Genius, Art and Science, The Responsibility of Knowledge," a symposium, 8 pm in Ramo Auditorium. Admission is free, presented by the Y in association with the Mark Taper Forum. The panel will include Brian Barry, Marshall Cohen, Jerome McGann, and Betty Ann Kevles. Harry Gray is the moderator.

Tuesday... May 15

"After 300 years, a new gravity equation," Dr. Lawrence Boren. Is this guy for real? Come to the Y lounge at noon and see.

Wednesday... May 16

Noon Update—"JPL, an Update." Lew Allen, Director of JPL.

Thursday... May 17

"Science and Conscience, Ethical Questions in Biotechnology," Boston University's Robert Nelson, Baxter Lecture Hall, 8 pm.

Saturday... May 19

Pasadena Symphony—The Y car is going. Tickets 3.50. Sign up now!

For more information, contact the Caltech Y office at 356-6163, or just drop in.

## THE CALIFORNIA TECH

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Friday, May 11, 1984

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# The Inside World

**Blacker:** I'd like everybody out there to give a very, very warm welcome to the two new future members of Blacker House—the Halibuts!! C'mon people, clap your hands! One, two. One, two. One, two. One, two. Oh, I've got the Halibut Blues. (He's got the Halibut Blues) I've got the Hali-Hali-Halibut... the pretty little Halibuuuuut... bluuuuues. Oh yeah.

Anyone out there who'd like a spare mattress or ten should bop over to Blacker before they git throwed out. I'm serious. —*A tall man with no body*

**Dabney:** Nothing human is Alientous.

"I've lost my shoes, I've lost my shirt. I've lost my mind."

Alligators, crocodiles, who can tell the difference? Can they sing? Dono. No shoes, no shirt, no mind, no service. —*Rex*

**Fleming:** The Penthouse party this past weekend was great thanks to social team, Ross, and the late Savage Toad.

On Monday Fleming clinched the Discobolus Trophy, and with football being the final interhouse sport the animals are getting ready.

Country Club is today (unless it's Ditch Day). Members only!!

Today also features Interhouse boy-stomping on the football field, and the Ath formal.

Room pick is 1/3 over. Pick into alley 4 if you can. —*Al Fansome*

**Lloyd:** Movie Night was a big success. The lounge still smells of moldy popcorn. Hopefully Lloyd will be opening (a slightly risky) house business soon...

Much to the surprise of at least a few people, the formal dinner was a success. A majority of the people (including me!) came dressed nicely, but a few Tropicly dissenters came in search of the beach. They found the water, anyway.

U.C.C. signups come down soon, interviews are early next week.

Room pick Monday the 21st.

Just remember, "Always look on the bright side of life..." —*Rod*

**Page:** Roompicks are over. Most are happy, some are zoners.

For a while we thought one of the Radio Boys was decaying but it turned out it was only the fridge.

Where is Rogue? Does Dr. Knurlin know?

Newsflash! —THE MICH—Black Flag refugees crash party; last seen heading south with keg. Roscoe expounds view on Pinball and Women.

Strange PCC woman seen wandering upstairs hallway. Armed with squirrel.

In the corporate world, M&D—AHP merger announced; largest severity network across the nation. They're bad, they're nationwide. Frosh, keep attending those lectures.

We played soccer on Sunday. Too bad many of our starters missed out on the fun. —*Howard*

**Ricketts:** Tonight is yet another fling, watch for 4-square with Blacker.

Yesterday wasn't Ditch Day, but there's always tomorrow... —*Bob*

**Ruddock:** Okay, you may have noticed quite a few sunburned bodies around here lately—that's because last week's social event was a beach trip. Perfect weather for it, too—the water was a little cold, though. Nevertheless, there were reported sightings of a large whale offshore which later beached itself next to the hamburgers.

And speaking of renegade, football season starts today. Well not for us—our first game is Monday, and I want to see a lot of people out there to cheer the football team on (and play in the marching band or whatever—just come out). And come out to play, too.

Some outlaws lived by the side of a lake

The minister's daughter in love with a snake

Who lives in a well by the side of the road

Wake up girl, we're almost home.

Oh, and Sherry? I'm not turning into a Pageboy—Yii, you're just being severe to me.

Shake it easy. —*Hos*

## Talon Gold

from page 1

that even if the technical problems could be overcome, the Western Alliance would not be less vulnerable to nuclear attack; a nuclear attack would become more likely, and the arms race would be exacerbated.

Laser beam weapons would be the first "layer" of the "layered defense." Space-based satellites would destroy Soviet ICBM's before they release their multiple warheads, before eight minutes of launch. To destroy a missile, the satellite would have to track a missile with extreme accuracy, so that from thousands of miles away, the laser beam could come in contact with a missile moving at 10,000 miles per hour. The system would have to find and destroy thousands of missiles within a few minutes. Almost immediate verification of a missile's destruction would be necessary. The laser itself would need immense amounts of power, and would be subject to atmospheric absorption and atmospheric disturbances including turbulence and clouds. The mirror for aiming the laser would have to be rugged, yet extremely high quality, and also would have to be hundreds of times as reflective as the target.

Each satellite, necessarily sophisticated and fragile,

would be extremely vulnerable. Some suggest a "pop-up" system for this reason, in which mirrors would be launched into orbit at the earliest indication of nuclear attack.

The ballistic missile defense would be vulnerable to simple countermeasures, such as decoy missiles, missiles with smokescreens or "burn away" ablative coatings, missiles which move erratically, and missiles which are very reflective. As the United States develops its ballistic missile defense system, the Soviet Union will of course develop further countermeasures.

Furthermore the system would have to be extremely reliable. It would have to destroy almost all the missiles, within a short period of time, in any weather conditions, at any time, with absolute certainty. Even a conservative one percent "leakage" would threaten our nation's survival.

The development of a ballistic missile defense system would violate several treaties, including the Anti-Ballistic Missile treaty. Critics contend that the system would encourage the Soviet Union to increase the number and quality of their missiles and warheads. The time scale would require that the defense be executed "automatically," precluding human decision. Also, the development of the defense system could encourage a

Soviet first strike, before it is "too late."

Next week the House will vote on an amendment to the Defense Authorization Bill which would call for a mutual U.S. and Soviet moratorium on development of ballistic missile defense and anti-satellite weapons. During the following week, the Senate will vote on Senate Joint Resolution 129, introduced by Senator Larry Pressler, which calls "upon the President to seek a mutual and verifiable ban on weapons in space and on weapons designed to attack objects in space."

To the Caltech and JPL community, the technical feasibility of ballistic missile defense must appear uncertain. Even if attainable, the desirability of such a system remains questionable. The involvement of Caltech and JPL in such a technologically and politically dubious project is sufficient cause for concern.

## Ignorance

from page 1

Reservations for "Ignorance is No Longer Bliss" should be made by calling (213) 972-7372. For further information, call the number listed in the preceding sentence. For information about *The Genius* or to order tickets for it by phone, call (213) 972-7654.

### THE ASCIT MOVIE

TONIGHT at 7:30 and 10:00

# WEST SIDE STORY

In Baxter Lecture Hall

50¢ ASCIT members

\$1 all others

## Cinematech

INGMAR BERGMAN'S

Persona

7:30

ROBERT ALTMAN'S

Three Women

9:15

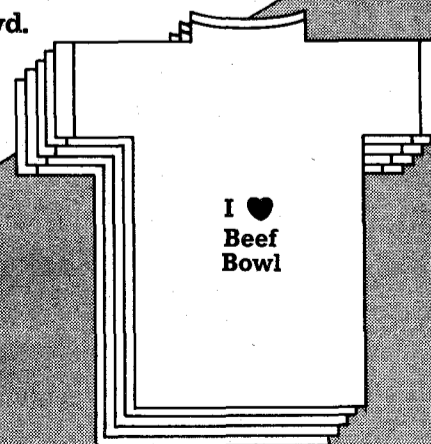
Saturday Evening in Baxter Lecture Hall  
Students, \$1 All Others, \$2

**EAT BEEF BOWL - It Will Suit You to a Tee (shirt)**

Come to the Beef Bowl Grand Opening in Pasadena and your \$5.00 donation to the American Heart Association will get you a free Beef Bowl Tee-shirt - done in the latest pastel colors (or black) with white writing...

The Grand Opening Celebration will also have music and dancing, prizes, a celebrity look-alike photo session, meal deals AND a special performance by the L.A. City Rockers - the hottest break-dancing group in the country!! All proceeds will be donated to the American Heart Association so come join in the fun while you join in the fight against heart disease.

It's all happening  
Friday, May 18  
from 1 - 6 pm  
at 1441 East Colorado Blvd.  
in Pasadena,  
right across from  
Pasadena City College.



## San Diego Out of This World

from page 1  
about 10,000 times too faint to be seen with the naked eye; such objects are at least about magnitude 5. The asteroid appears to be made of rocky silicate material. From its brightness and reflectivity, astronomers have estimated its diameter at about three miles.

The asteroid is a member of an unusual class of minor planets known as Hungaria objects, which may be derived from the same swarm of planetoids from which the Earth accumulated. Hungaria objects are distinguished by their near-circular orbits that are tilted relative to the planetary plane and which lie just beyond the orbit of Mars.

Asteroid San Diego's orbit is inclined 22 degrees relative to the planetary plane. The asteroid takes 2.2 years to circle the sun, coming to within 65

million miles of Earth.

"Naming this particular asteroid after San Diego this year is especially appropriate, because to photograph it from Palomar, the telescope had to be pointed to the south toward San Diego, just above the horizon," said Helin, the planetary scientist at Caltech's Jet Propulsion Laboratory who first detected the object. She found the asteroid, which was initially designated 1982SA, on a photographic plate taken by Helin and Dr. Eugene Shoemaker, Caltech professor of geology and planetary science, using the 48-inch Schmidt telescope at Palomar.

"Our near-Earth asteroid search program, like many such efforts at Palomar, is critically dependent on dark skies—especially attempts to discover objects such as Asteroid San Diego, which during the sum-

mer months are visible from Palomar only above San Diego. Undoubtedly, San Diego's considerate gesture will contribute directly to still more discoveries," said Helin.

Although Asteroid San Diego was discovered in 1982, not until this year was enough observational data gathered about its orbit to qualify it for naming and inclusion in catalogue. Contributing to the observations of the asteroid were Lowell Observatory in Flagstaff, Arizona; the Lincoln Laboratory ETS in Socorro, New Mexico; and observatories in the Soviet Union, Australia, and New Zealand.

Helin has searched for near-Earth asteroids, using the 18-inch and 48-inch Schmidt telescopes at Palomar, since 1973. Her efforts plus, more recently, those of Drs. Shoemaker and R. Scott Dunbar, have yielded about 50 percent of the new near-Earth asteroid discoveries made since

then. Helin and associates have discovered 20 near-Earth objects, more than any other research group.

The Palomar asteroid search program is funded by NASA, The Planetary Society, and the World Space Foundation. Such search programs are important because they yield information on the likelihood of large objects striking Earth, which has been known to happen in the past with catastrophic consequences. Asteroids also offer scientists almost pristine samples of early solar system material, which could yield insights into how the planets were born. Also, asteroids may someday be used as sources of raw materials for both future space colonies and a mineral-depleted Earth.

## New Gravity Equation?!

by Chris Meisl

"After Three Hundred Years, A New Gravity Equation?!" is the title of a talk to be given by Lawrence Boren at noon next Tuesday in the Y-lounge.

Boren will present his new gravity equation which eliminates 2 of the 4 components in Newton's gravity equation. Most significant is the disappearance of the gravitational constant.

The talk will also include a reinterpretation of gravity as a downward push, as opposed to the conventional pull.

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## Drever Speaks on Gravity Waves

Caltech News Bureau

Gravitational waves—ripples in the fabric of space-time traveling through the universe at the speed of light—are a fundamental prediction of Einstein's general theory of relativity and the object of an intensive search by scientists worldwide. Ronald Drever, Caltech professor of physics, will present a talk on the hunt for this elusive form of radiation, in an Earnest C. Watson lecture entitled "Gravitational Wave Experiments—A New Challenge for Laser Techniques," at 8:00 pm, Wednesday, May 16 in Beckman Auditorium. Admission is free.

Physicists believe that gravi-

ty waves may be generated during such spectacular cosmic events as supernovae or the collision of black holes, or from astronomical phenomena such as the pulsars associated with neutron stars. Under Dr. Drever's direction, a Caltech research team is developing ultra-sensitive, laser-based techniques that offer perhaps the best opportunity thus far to detect gravity waves emanating from these and other sources. Dr. Drever will discuss this innovative instrumentation, its use as a new tool for astronomy, and its potential for testing predictions of relativity theory.

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## sports

## Record Baseball Season

## Women's Water Polo Drowned by Riverside

by Skip's Granddaughter

Spring, 2009. With the final touches on the Natatorium finished, Caltech's master athletic revamping plan is complete. The program was initiated 25 years ago by Warren Emery (then the athletic director, and who you can still see at 5:30 every evening jogging around the track). The money was donated by the numerous Caltech alumni who had been Olympic champions and rich engineers. Mr. Emery graciously accepted these donations and shrewdly invested them in bacon futures, quadrupling the sum.

The first use of the money was for a new swimming pool, women's locker room, and weight room. Shortly after that a dance/wrestling/karate room was finished above the weight room. When football was dropped in 1990 due to high costs and poor participation (except for physical plant employees) it was decided to make the old football field into the soccer field. That way the existing baseball stadium (finished Nov. 1991) could be constructed on the old site without hurting another sport. (Note: Caltech used to have a cricket club which used the field, but that dissolved in 1989 when Indian citizens were not granted student visas due to an anti-CIA rebel takeover). In case you don't know, Laurence Park seats 5,420, with the fence at 345 down the lines and 405 in center field.

That ended major construction for almost ten years, until 1999 when Caltech bought out

neighboring Poly Prep. The Poly gym and a couple of classrooms (where the accelerated 7-12 year old freshmen take classes) were left intact, but the rest was redesignated for new athletic facilities. A covered tennis center was constructed, plus a golf driving range, and finally a 50-meter pool with a diving tower, designed exclusively as a top water polo facility.

The past and current aquatic director, Clint Dodd, having spent over 30 years on the athletic staff, recalls the first ever water polo match played in what is now the old section of the Caltech Swim Complex.

"It was a women's game, Caltech against U.C. Riverside, and I was coaching again after a 3-week absence. The referees were also players of mine that we had recruited only 15 minutes before the start of the game. At times I wished we hadn't. The gals played well, though not as good as the other team. We closed down UCR's pick, but there were defensive errors that left others open. Our offense was mostly fast breaks and occasional man-ups, with some of our good arms either off target or just not in the game. We had one new girl who played well, an M.I.T'er. She made the most incredible fake shot I've ever seen. We lost though, 10-8. Ah, they really were a great bunch of kids, those girls back then."

Say, did I ever tell you about the time I shot 74 at Whittier Narrows...."

## Cricketers Outbatted by Blackwater Pub

In an extraordinary match at Claremont, Caltech lost by 4 wickets to the sporting frequenters of the Blackwatch Pub.

Let me explain to shocked readers, who correctly imagine the athletic limit of Budweiser-boozers to be a game of pool, that at the Blackwatch real men drink real beer. That is to say, beer of English and Australian brew. Even the finest exponents of the professional game are partial to these nourishing fluids, and so it's traditional for pubs to raise a team, and a good one at that.

Caltech, inserted on an uneven pitch, lost their first three wickets in just two overs. But that brought in Dayalar, who was to stay for the next twenty-six. His innings of 71 was by far the highest ever by a Caltech batsman. Playing fluently from the start he hit ten fours and two sixes, directing his shots mainly on the leg side between square and straight. Surviving a chance at slip, he had a sticky period in the middle of his innings, but as he passed fifty he was totally dominating the bowling.

At the other end wickets fell pathetically. Six men scored zero. The score facing the last batsman, undergraduate Paul Filmer, was a disappointing 62-9. But Paul showed great technique as he hit two marvellous straight sixes and two fours. Left not out on 21 he and Dayalar had contributed a record stand to raise the total to the season's best of 121.

Missing four regular bowlers, Caltech needed all the runs they could get. The first four Blackwatch batsmen hit out confidently against the many bad balls, and were positively encouraged by no less than five dropped catches. They amassed a demoralising 97-2 off sixteen overs.

The fielding performance was however spared the humiliation of an eight-wicket defeat by surprise bowler Narashimar, who essentially bowled line and length and picked up 4-19. Caltech ended the match aggressively with all nine fielders around the bat, but there were simply no more runs left to defend.

by Doug Oute

The 1984 Beaver Baseball Season ended last week. In the final four games of the season, the Beavers lost 3 games to Whittier, and one close game to Pacific Coast Baptist Bible College. The scores in the Whittier series were 4-12, 1-13, and 1-9 in favor of Whittier.

In a hotly contested game with PCBBC, the Beavers played a sound game, but fell victim to the big inning. PCBBC wracked up nine runs in the bottom of the seventh to erase a 6-2 deficit, and eventually won 11-9.

Anybody who watches baseball for Caltech must accept the fact that there are going to be a lot more losses than victories in the season. The Beavers' opponents in SCIAC are tough, and Caltech's sports scholarship program is

notoriously underfunded. Victory isn't always the sole measure of success, however. Despite numerous losses, the 1984 Beavers had a very productive and successful year.

The Beavers broke just about every school record that was worth breaking. New single season records were set by the Beavers in a total of 11 different categories, including stolen bases (56), at bats (964), games (35), runs (169), hits (212), doubles (29), triples (12), home runs (12), putouts (746), and assists (287). Despite hard luck, some of this did show in the win/loss column. The 1984 Beavers are the winningest baseball team at Caltech in the last 30 years.

The Beavers had some individual record breakers, too. Although no stats are kept on hitting streaks at Caltech, Michael Keating's string of 15 straight games with a hit must

rank up there with the longest seen at Tech. Pat Harrison carved a niche for himself in Caltech baseball history by breaking the career record for RBI's. To fully appreciate this, one must realize that Harrison only played at Caltech for two years. Pat also broke his own single season record for hits in a season, in addition to breaking the records for games played, at bats, and runs. Jim Hamrick also had a good year, tying the single season records for home runs and RBI's, and breaking the single season run record (along with Harrison). Doug Shors now holds the career record for most at-bats, and Ed Casey tied the single season record for doubles.

On a sad note Scott Laurence, coach of the Beavers, won't be returning next year. We wish him well in his future endeavors on the diamond.

## Sports Calendar

Fri.	5-11	All Day	Men's Tennis	NAIA District III	Cal Lutheran
Fri.	5-11	All Day	Track	NAIA District III Prelims	UC Santa Barbara
Sat.	5-12	All Day	Men's Tennis	NAIA District III	Cal Lutheran
Sat.	5-12	All Day	Track	NAIA District III Finals	UC Santa Barbara

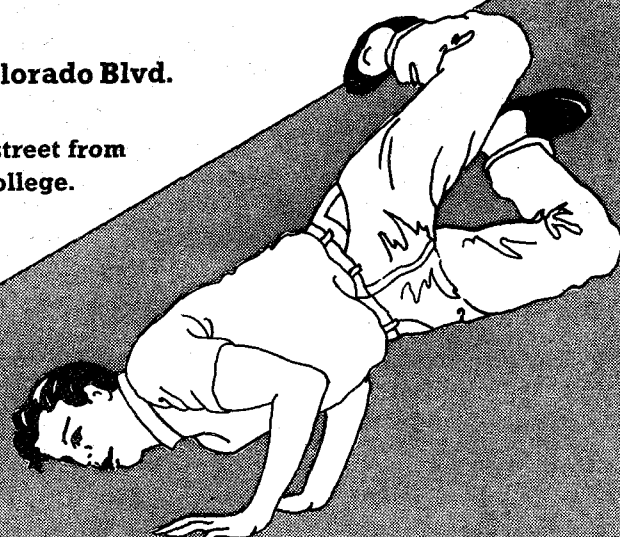
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# Oxford Wants Kousser

Caltech News Bureau

J. Morgan Kousser of Caltech is the youngest scholar in 25 years to be named Harmsworth Professor of American History at Oxford University. Currently professor of history and social science at Caltech, Kousser will fill the one-year visiting professorship in the 1984-85 academic year.

The position at England's oldest university is named for Harold Vyvyan Harmsworth, eldest son of the first Viscount Rothermere, who was killed in World War I. The first Harmsworth Professor was appointed in 1922. The person selected to be Harmsworth Professor must be a citizen of the United States

and a scholar in the field of American history. Selected annually by a committee consisting of the present Viscount Rothermere, the Ambassador of the United States to the Court of St. James, and several Oxford professors, the Harmsworth chair has been filled by such noted historians as C. Vann Woodward of Yale, Allan Nevins of Columbia, David H. Donald of Harvard, George Mowry of UCLA, Kenneth M. Stampp of Berkeley, and Carl Degler of Stanford.

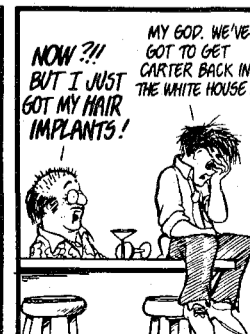
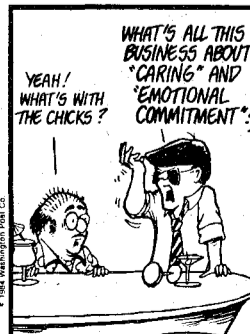
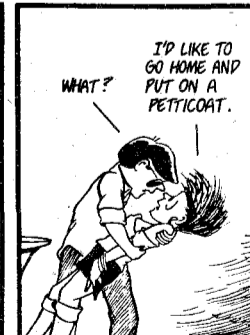
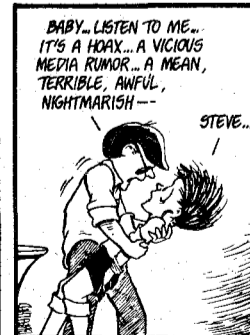
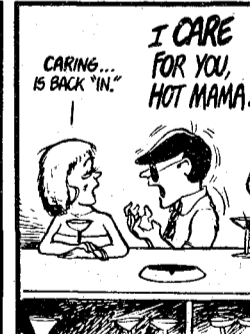
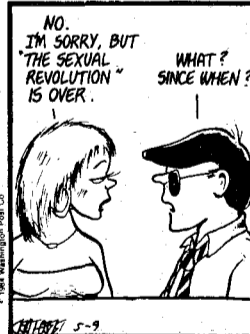
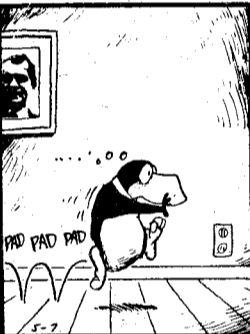
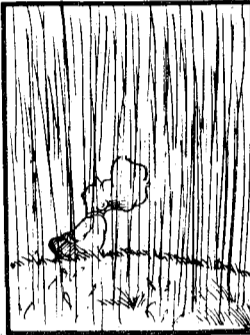
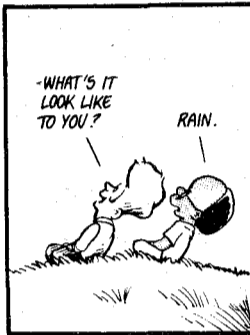
Kousser, 40, received his undergraduate degree at Princeton in 1965, and his MA and PhD degrees at Yale, in 1968 and 1971 respectively. He

has been a faculty member of the Division of the Humanities and Social Sciences at Caltech since 1969. He is the author of *The Shaping of Southern Politics*, and has published 23 articles and 25 book reviews in scholarly journals, and co-edited a volume of essays in honor of his Yale mentor, C. Vann Woodward.

Kousser has received research grants from the National Endowment for the Humanities and the Howard and Graves Foundations, and will be a Guggenheim Fellow in 1985-86. He was an expert witness in six voting rights cases in federal courts in Alabama, Tennessee, and Washington, D.C., and in 1981 testified on the renewal of the Voting Rights Act before the Committee on the Judiciary of the U.S. House of Representatives.

### BLOOM COUNTY

by Berke Breathed



## Much Ado About Nothing

from page 2

language premier of two French comedies by one of the most famous French authors, six (I repeat—6) student-directed shows as well as *Much Ado About Nothing*, currently running. These are ambitious programs, presented with a thoroughly professional attitude by their casts and crews. The program is as full as a theater program at a University with a Theater Department. This requires great work and dedication on the part of all involved. And a great many students are involved. They spend weeks in rehearsal and preparation in the belief that their involvement is worthwhile and respected. *I am offended for them*, for myself, and frankly, for the intellectual climate of the Institute. God knows, there is precious little attention paid, and precious little money invested in on-campus cultural events involving student participation. As annoyed as I am, I will say there is a shameful lack of attention paid and money invested in the balancing of the education and participation in the arts. It certainly does not help when there is apparent student apathy about those activities in which the students are involved in presenting theater, creating visual art, making music. I say "apparent" because there obviously are students interested or none of these activities would exist. But *the Tech*, as forum reflecting student activities, ignores them.

We depend heavily upon the cooperation of the campus newspaper to inform our student audience of our events. It, along with posters and flyers (which are torn down by B&G

almost as fast as we can put them out) is our sole means of reaching the vast majority of the campus. An, in an effort to cooperate with your limited staff and time, we provide stories ready-to-print and photographs. I remind you that these take our time and our money, just as I remind B&G that our posters and flyers are handsome and fairly expensive.

I suppose that it is not possible to scream in a vacuum, but that's exactly the way I feel at the moment. The cumulative frustration of this entire year of neglect and deliberate ignorance has pissed me off.

Obviously, it is too late to print an article for opening weekend. That is history, and the 3/4-full houses represent a loss we cannot recoup (complicated by being rained out on Friday the 27th and drowned out on Saturday the 28th by hard rock). But it is my hope that you will at least AFTER THE FACT, when it is no longer "news" run some sort of review and pictures in your next issue (a week after final closing) just as a simple courtesy to the students and Caltech family members who have worked so long and so hard with such singleness of purpose to present a beautiful entertainment for their peers.

Sincerely,

—Shirley Marneus  
Director/Administrator

## Boren

from page 4

In an interview, Boren said he wanted to "make science dramatic" and seeks a "basic understanding of the fundamental laws of nature."

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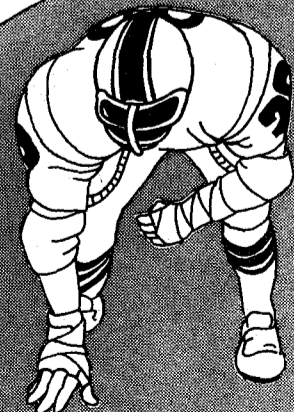
Here's  
the Beef!!



Pasadena High School claims their football team can out-eat John Muir's - And John Muir says NO WAY. Blair High School claims its football team can blow both of them away at the training table. Who's talking turkey? Come find out at the great "grub match" between the schools... a grudge match to savor...

In addition to the Beef Bowl eating contest, there will be music and dancing, prize drawings, and meal deals. And a special performance by the L.A. City Rockers - the hottest break-dancing team in the country. All proceeds will be donated to the American Heart Association - so join in the fun while you join in the fight against heart disease.

It's all happening  
Friday, May 18,  
from 1 - 6 pm,  
at 1441 East Colorado Boulevard  
in Pasadena,  
across the street  
from Pasadena City College.



## announcements

### Inform the Frosh?

There will be a petition circulating during next week to allow informing freshmen of the mechanics of rotation. This necessitates the revision of rotation rule II.5. Copies of the petition will be posted in the house lounges.

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**EE GRAD STUDENT** needed for circuit design, PCB layout, and prototype breadboard construction. Experienced undergrad considered. Send resume and salary requirements to: Mr. E. Brown, P.O. Box 7000-622, Redondo Beach, CA 90277.

**HELP WANTED.** Test question writers. \$5—\$20 per question. Mechanical comprehension, data interpretation, and general science. Call Psychometrics at (213)829-0248. Ask for David or Pat.

### KELROF

The event of the 80's is rapidly approaching. In fact, it is May 19th to 20th. Although the Soviets are not participating, you can still glide gracefully and easily around the track on the order of 80 times in 24 hours with a bit of training, a bit of effort, and a ton of pain. So get off your butts and train, or else you're gonna eat shit and die. If you have a team, contact Dave Gallup at x6180 before Friday the 18th; timers, pacers, and random help are also needed.

### Rotation Discussion

Clubroom 1 of Winnett Student Center, at 8:30 pm on Tuesday, May 15. An open meeting for anyone who wants to help make a constructive proposal to change rotation to reflect freshmen's choices more. Contact: Art Duval or Keith Bowman, at 578-9346.

### Chamber Music

On Saturday, May 12, the Caltech Chamber Music groups will present the first concert of the spring season. (The second one is on May 18.) There will be all kinds of music from Brass Quintets to harpsichord with strings. The concert starts at 8:15 pm, in Dabney Hall Lounge. Admission is free.

### Bandorama

Tonight, May 11, if you aren't going to the big dance, why not attend the fifth annual Bandorama, featuring the Caltech Wind Ensemble and Jazz Band. The concert will feature flutist Diane Chassman. The concert starts at 8:15 pm in Ramo Auditorium. Admission is free.

### Course Offerings

*Lit 171. The Divided Self in Literature and Psychology.* This course combines readings from English and American psychoanalytic researchers as well as readings in 19th and 20th century literature exploring the differing views of the self in two disciplines. Representative authors would be Winnicott, R.D. Laing, Tennyson, Arnold, Yeats and others. Instructor: Ende.

*Ec 112. History of Economic Analysis.* (Prerequisite: Ec 11). An examination of the development of economic analysis and doctrine, particularly during the 19th century. There will be a specific concentration on the work of Smith, Marx, and the utilitarians. Instructor: Border, Hoffman.

### Dinner Winner 3

Don't forget that the *little t* is offering five prizes of \$20 (sponsored by the Master's office) towards dinner for two at an as-yet unreviewed restaurant.

Each week, one review is being drawn at random from all of those received, and the reviewer wins \$20 toward eating at (and reviewing) a new restaurant. The prizes are open to undergrads only, but submissions are welcome from everyone.

This week's winner is Lily Wu, who submitted three reviews, including The Old Spaghetti Factory.

Send your entries to *little t*, 107-51. You could be the next winner!

### Beef and Breakin'

On Friday, May 18th, from 1-6 pm, the new Beef Bowl at 1441 E. Colorado will have its official grand opening, complete with marching bands, celebrity look-alikes (send strange photos of yourself and a pseudo-celebrity to your friends and loved ones), T-shirt giveaways, and a performance by the L.A. Rockers, a widely-acclaimed break-dancing group. All proceeds from this special event are to benefit the American Heart Association.

### New Grad Jobs

If you have not yet decided on a permanent position, be sure to check the "New Grad" job folder in the Career Development Center. Companies who were unable to recruit on campus have sent us job descriptions hoping to attract one of you. There are some attractive openings available.

### Clubs/Activities

In an effort to update the Clubs & Activities section of the *little t*, we are looking for information on the following groups. If you are an officer in one of these clubs (or any other club which was not listed in last year's *little t*), please send a short description of what it does, along with the name, mail code, and phone number of someone who will be in charge at the beginning of the next school year, to *little t*, 107-51.

Chess Club  
Debate Club  
Flying Club  
Gaming Club  
Juggling Club  
Numismatic Club  
Russian Language Workshop  
Ski Club  
World Affairs Forum

### C•L•A•G•S

CLAGS is going to West Beach on Saturday, May 12. Contact Jush Susser or Eric Stier for directions.

We will be meeting again this Sunday at 2:00 in 210 Baxter to make plans for the May 25th dance. Refreshments will be served. Everyone is welcome.

### Volley Tourney

Caltech once again hosts its triannual three-man Volleyball Tournament on Sunday, May 13. Registration is at 8:00 am Sunday in the Gym, with matches starting at 8:15. All teams will be organized the morning of the event so it is not necessary to bring a team, just yourself. If you are interested in playing and have any questions, please contact Brett Bush (578-9294) or Drew Lindberg (x3955). Trophies will be awarded to the winners, so come and join the fun.

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