

HAPPY  
BIRTHDAY

# THE CALIFORNIA TECH

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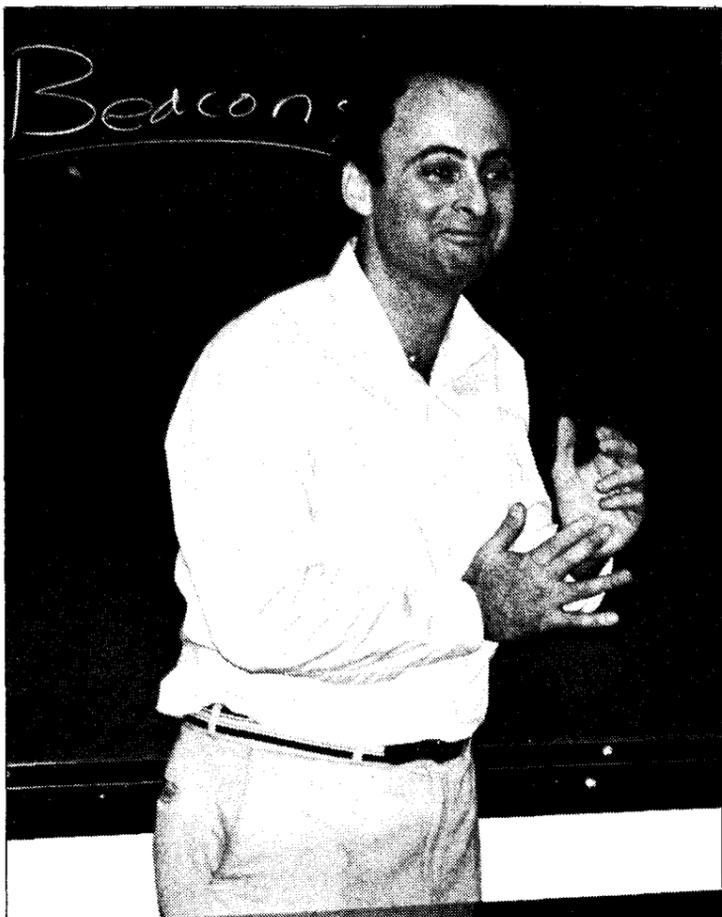


photo by Mark Looper

David Brin reminisces about his days as an undergraduate days at Caltech. The author of several SF novels of note, he delivered a lecture entitled "Why We Are All Such Good Liars."

## Brin On Antinonhumanism

by Dan Ashlock

David Brin, noted science fiction author, gave a lecture on campus Tuesday night of this week entitled "Why we are all such good liars". Dr. Brin is a former Caltech undergraduate and has a Ph.D. from UCSD. He is the author of *Sundiver*, *The Postman*, *The Practice Effect*, *The River of Time* (anthology), and *Startide Rising*—winner of the Hugo and Nebula awards. His new book, already sold out in stores, is titled *The Uplift War*. It is a situational sequel to *Startide Rising* and should be available in reasonable quantities this July.

The curious title of Dr. Brin's lecture had almost nothing to do with his talk and was stolen from another talk he gave a few weeks ago. He led off with a number of reminiscences from his undergraduate days at Caltech. According to Dr. Brin there was once a time when Friday dinner in the undergrad houses was an affair to which you wore a tie and at this period in Caltech's history off-campus women actually came to dinner. On Fridays.

Dr. Brin spoke about his academic career, claiming to have predicted dust on Halley's comet, and to have gotten his dissertation accepted over the vociferous objections of his thesis advisor. He had

warm memories of his days at Tech, saying "I have very positive feelings about my undergraduate education at Caltech, the parts I have any positive feelings about at all." When asked what his stack had been his senior ditch day he gave the lackluster reply "I lived off campus".

Dr. Brin touched on a number of random and apparently unrelated topics during his speech. He is currently living in Britain of which he said, "It's a nice place, pleasant people, lots of things to see and do, but I wouldn't want to raise any children over there." When asked why, he replied, "because it [Britain] is over." On the subject of education Dr. Brin urged us, after we graduate, to get involved in teaching, even if it means talking the company you work for into adopting a school or spending spare time teaching a course at the local high school.

On the evolution of intelligence and the question of extra-terrestrial intelligence Dr. Brin had a number of thoughts. He accused Carl Sagan and Frank Drake of having become old fogies, after early careers as avant garde, open-minded reformers of the old school that denied the possibility of non-human intelligence, they have been forced into a retreat to a defensive position as their predictions of imminent alien

contact have collected more and more dust. According to Dr. Brin the pre-Sagan generation of antinon-humanists were themselves reacting to the damage done science by Percival Lowell with his premature report of canals on Mars. The latest generation of theorists in extra-terrestrial intelligence are themselves reacting to the apparently excessive optimism displayed by Sagan and his colleagues.

Brin advanced two theories to explain the apparent uniqueness of human intelligence. The first is that the human animal may have evolved in a curiously inefficient fashion. Where the usual development of intelligence would proceed with alternating incremental jumps in software and hardware until a species had achieved total mastery of it's environment with, say, flint tools, fire, and a maximum fifty word vocabulary, what humanity did was analogous to developing hardware to the level of a Cray 12 while still running only a Fortran 1 compiler. Once the overkill hardware was developed a software revolution to excessive levels of intelligence took place.

His second theory was more plausible, save for the evidence in modern society against it. Brin said that human intelligence might have

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## Hood and Biotech

[CNB]—Dr. Leroy Hood of Caltech will discuss new techniques in biotechnology and their applications to medicine in a talk entitled "Biotechnology and Medicine of the Future" at a national meeting of more than 3,500 biomedical researchers on May 3 in San Diego.

Dr. Hood will speak before the Frontiers of Science Symposium at the 1987 National Meeting of the American Federation for Clinical Research, the American Society for Clinical Investigation, and the Association of American Physi-

cians. The meeting is currently underway at the Town and Country Hotel in San Diego.

Dr. Hood is the Ethel Wilson Bowes and Robert Bowles Professor of Biology at Caltech and chairman of the Institute's Division of Biology. He is also director of Caltech's microchemical facility, a leading research center for the development and use of instrumentation in the field of molecular biology.

Dr. Hood is a member of the National Academy of Sciences and

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## Martin—Top SF Alum

[CNB]—Mr. William L. (Lonnie) Martin III has accepted the position of president of the San Francisco chapter of the California Institute of Technology Alumni Association. Mr. Martin received two degrees from Caltech—a B.S. in engineering in 1969 and an M.S. in aeronautics in 1970.

For those of you with long memories, this is the same Lonnie Martin who, as a wide receiver for Caltech's football team, caught 11 of the team's 14 completions to help defeat U.C. San Diego by the score of 34-31. The loss so devastated U.C.S.D. that they gave up football for several years. (Of course, they said they had other reasons.)

Now a resident of Danville, Mr. Martin is a systems marketing manager at Rolm Telecommunications in Santa Clara. He was a member of the Caltech Alumni Association Board of Directors from 1975 to 1978.

In other Alumni Association news, Mr. Gilbert B. Peppin has become the new president of the Seattle chapter, and Mr. Spicer V. Conant has become the new president of the Phoenix, Arizona chapter.

Mr. Peppin, who received his B.S. in physics from Caltech in 1953, is president of Special Type, Inc. of Redmond Washington, which is developing specialized software for photo-typesetting.

Mr. Conant received his B.S. in physics from Caltech in 1964. He is president of The Conant Group, Inc. of Phoenix, which provides consulting services to small and medium-sized high-technology companies, focusing on areas that contribute to financial strength.

## Alumni Return for Lectures

[CNB]—Some 1,500 Caltech alumni and guests will gather on the campus Saturday, May 16, for a day packed with research seminars, special programs and exhibits, a picnic luncheon served to music of the Caltech Brass Quintet, a barbecue dinner, and a concert by the Caltech Glee Club.

This event will be Caltech's fiftieth annual Alumni Seminar Day, and as guests absorb news of current research and visit with friends, they will be commemorating an event that began in 1938. Among the many topics featured on that first program was a hopeful one that would later prove ironic: "Uncle Sam's Domestic Tranquility for the Next Fifty Years," by historian William B. Munro.

This year the alumni will choose from 13 faculty seminars, plus three by students who will describe their work in Caltech's Summer Undergraduate Research Fellowship (SURF) program.

The speakers and their topics will be:

Arden Albee, professor of

geology, "Return to the Red Planet."

Clarence Allen, professor of geology and geophysics, "Fault-finding in Tibet."

Albert R. Hibbs, retired from JPL, "JPL in Space: Past, Present and Future."

John J. Hopfield, Roscoe G. Dickinson Professor of Chemistry and Biology, "Neural Circuit Computer for Complex Decisions."

Andrew G. Ingersoll, professor of planetary science, "Collaborating with the Soviets in Planetary Science."

Masakazu Konishi, Bing Professor of Behavioral Biology, "The Gender Gap in the Brain."

Jenjoy La Belle, associate professor of literature, "Face to Face: Women, Mirrors, and Identity."

James J. Morgan, professor of environmental engineering science, "Tiny Particles in the Water Environment: Their Origin and Removal."

Robert W. Oliver, professor of economics, "New Directions for the World Bank."

Charles R. Plott, professor of

economics, "Experimental Economics: An Emerging Discipline."

Frederic Raichlen, professor of civil engineering, "Breaking Waves and Their Effect on Our Coastline."

B. Thomas Soifer, senior research associate in physics, "The Birth of Quasars?—Ultraluminous Infrared Galaxies."

Kerry J. Vahala, assistant professor of applied physics, "From Nanofabrication to Quantum Dot Lasers."

SURF student John Alexander Becker, "Cosmological N-Body Simulations."

SURF student Salim Khan, "Detecting Planets Outside the Solar System."

SURF student Kyuson Yun, "Protein Targeting to Mitochondria."

Francis H. Clauser, chief scientist for one of the U.S. yacht clubs working to bring the America's Cup back to the United States from Australia this year, will speak at a general session on "The America's Cup: A Revolution in the Making."

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## Ernest H. Swift: 1897-1987

[CNB]—Ernest Haywood Swift, professor of analytical chemistry, emeritus, at Caltech, passed away on Sunday, April 26, 1987. He was 89 years old.

Born on July 2, 1897, in Chase City, Virginia, Professor Swift was associated with Caltech longer than any other person. He came to the Institute in 1919 as a graduate student and teaching fellow in chemistry, and stayed for the rest of his life. He received his M.S. degree

here in 1920 and his Ph.D. in 1924. He was instructor in chemistry from 1920 to 1928; assistant professor from 1928 to 1939; associate professor from 1939 to 1943; professor from 1943 to 1967; and since 1967 he was professor emeritus.

Professor Swift served Caltech as Chairman of the Division of Chemistry and Chemical Engineering from 1958 to 1963 and as Chairman of the Faculty and the

Faculty Board from 1963 to 1965. He made important contributions to this country's war effort during World War II and he is remembered fondly as an excellent teacher.

During his career, Professor Swift received numerous awards, including two from the American Chemical Society: the Tolman Medal (1963) and the Fisher Award in Analytical Chemistry (1955). He was the author of over

80 scientific publications, including four standard books on analytical chemistry. Professor Swift's research involved the application of physico-chemical principles to the solution of problems in analytical chemistry.

Professor Swift is survived by a daughter, Elizabeth Swift Kline, and two grandchildren, Sandra Kline Mindell and Mortimer Allen Kline III. There will be no funeral. His family asks that in lieu of flowers, donations be sent to Caltech's Division of Chemistry and Chemical Engineering for the Ernest H. Swift Lecture Series.

LETTER

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Please understand, dear readers, that I no longer have any connection with what goes into our section. If you'll just take a couple of seconds to look under the column of credits on page 2, you will find that the Inside World writer is Margolita Mia. She's the one in charge now; she should take the blame. My hands are figuratively clean.

So why is my signoff still here? I didn't ask for it to become a memorandum. I believe, however, that it serves as an alias for spineless worms who would rather remain anonymous so that they can fulfill their need to make petty jabs and get away with it. I don't know if Margi wrote it, or even if any of her friends wrote it; it just might very well be a conspiracy in \*\*\*\* House to make Blacker look bad during the Weekend of the Pre-Frosh Girls. In any case, Mr. Black Gymnast-from-Fleming House, don't point your finger at me and tell me, "The brothers want you bad." Don't hang me upside-down by my little toenails, Mr. 6'-6" Latino, and have your gang carve their names on my chest. It's not my fault. Just ask James Shih.

-Alex Wei  
Ex-Blacker House Inside World writer

COMMENT

Techers Are Stupid

by Huy Cao

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The misconception I'm thinking about was perfectly expressed in the "Praise For No Gag Rule" letter last week. I quote: "Some may argue that the gag rule saves 'gullible frosh' from believing horror stories about other houses. Are these freshmen who are going to be the scientists of tomorrow? Will they be able to ignore the erroneous data points? . . . We do not have to shield them from the garbage that flies around during rotation. Our freshmen deserve more credit; they can filter out the lies."

This type of myth about intelligence usually takes the form, X is smart, therefore X can do Y better than people who are not smart. In this case, let X=freshman and Y=discarding lies. However this myth is bogus. I don't think there is any connection between interpreting scientific data for and judging people's honesty. Does being a good physicist make a person less gullible? It's possible (but not probable). If somebody had said to me during rotation, "House X had characteristic Y," I probably would

have believed him (assuming the statement was fairly subtle) because, as we all know, the Honor Code keeps us from taking unfair advantage of others--even during rotation.

I don't necessarily disagree with the conclusions of the letter, only with the slipshod thinking that went into that part of it.

Here's another example from two weeks ago about forced feeding: "Any person as intelligent as a Caltech student knows that we will only gain from Mr. Hindoyan's offer." Hopefully when the editors wrote this, they weren't sober!

The intelligence myth really gets hairy when people expect more out of you just because you're "smart." Take the "Rampant Chauvinism" letter from a few weeks back, written by "an extremely concerned mother." She writes, "Since you guys [Techers] are really a bunch of smart kids, let's have a little creative, clever, witty, clear, comic writing."

Here, the myth is that intelligence is connected with wit and humor! The Inside World is written by scientifically intelligent students, and although some of the stuff is pretty humorous, the rest is pretty laughable.

Of course, the intelligence myth (the myth that intelligent people are better than "average" people in areas not having to do with intelligence) is similar to other myths. There's the vague idea some

people have that artists are, somehow, better human beings than non-artists just because they are artists. People who hold this false belief are inclined to ask questions like, "How can the same country that produced Beethoven also produce Hitler?" It's a stupid question. It's stupid because art is amoral.

Other examples of the intelligence myth have been expressed by Techers themselves, on these very

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  - b. Showering regularly is a good idea.
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4. (Physics) Derive all possible universes. Show that the subspace known as Fleming is a closed space. Show further that Page is a null space.

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## ENTERTAINMENT

## Biography of the Atomic Bomb

by Arthur Lee  
*The Making of the Atomic Bomb*  
 by Richard Rhodes  
 Simon and Schuster, \$22.95

*Some say the world will end in fire,  
 Some say in ice.  
 From what I've tasted of desire  
 I hold with those who favor fire.  
 But if it had to perish twice,  
 I think I know enough of hate  
 To say that for destruction ice  
 Is also great  
 And would suffice.*

One cannot help but think of the simple and effective imagery evoked by these words when one reads *The Making of the Atomic Bomb* by Richard Rhodes. The poem, "Fire and Ice," was written by Robert Frost in the early 1920's, and he was already ahead of his time.

The story of the atomic bomb is an old one. It has been told many times. Often, it is told from first-hand, personal perspectives, and it is usually limited to the Manhattan Project. Rhodes has successfully woven together many, if not all, of these personal perspectives into a splendid tale. Furthermore, he has given the reader a full account of the ideas and attitudes in science and technology that led to the eventual making of the bomb.

The book succeeds on many levels. On the most basic of levels, that of a story, it works pure magic. The story has a structure that is at once grand and awe-inspiring and details that are rich and compelling. Rhodes, a novelist by trade, has the writing sensibilities of a good one. The narrative is wrought with personal and technical details that add to the suspense.

Witness our young Richard Feynman who tinkered back to life the shortwave radio that informed the physicists about the countdown on that fateful day of the Trinity shot. Witness one young Philip Morrison, who wrote the following on that day. "I placed the welding glass over the right lens of my sun glasses, the left lens of which was covered by an opaque cardboard shield. I counted seconds and at zero began to raise my head just over the protecting rise."

Rhodes then continues the narrative. "Time: 0529.45. The firing circuit closed; the X-unit discharged; the detonators at thirty-two detonation points simultaneously fired; they ignited the outer lens of Composition B; the detonation waves separately bulged, encounter inclusions of Barotol, slowed, curved, turned inside out, merged to a common inward-driving sphere..."

When the bomb exploded, Morrison wrote, "It was like opening a hot oven with the sun coming out like a sunrise." Then there is also the famous quotation from the Hindu scripture used by Robert Oppenheimer to describe his own feelings: "Now I am become Death, the destroyer of worlds."

## Glean the Turmoil

The book also succeeds as a history of science in the first half of this century. The necessarily detailed accounts of important discoveries are excellent. But success also lies in part on the richness of characterization of many of the major players in this drama. One could glean the interesting turmoil that was churning in Oppenheimer's mind from his private letters. He wrote of his undergraduate days at Harvard, "They were the most exciting time I've ever had in my life. I really had a chance to learn. I loved it. I almost came alive." But there was also much pain, well hidden from even the closest of friends. He wrote, "I hardly took an action, hardly did anything or failed to do anything, whether it was a paper in physics, or a lecture, or how I read a book, how I talked to a friend, how I loved, that did not arouse in me a very great sense of revulsion and of wrong."

continued on page 5

## COMMENT

## Gag Rule

from page 2

pages. In an article in October about the gag rule, one of the presidents declared, "The gag rule is an insult to the intelligence of the frosh... Anyone who believes the rumors deserves to end up where they do." Again, what's the connection between intelligence and not believing rumors? If you have an IQ less than an anorexic's weight, then I can see how you would believe dumb rumors. But the more subtle rumors seem to be the ones that cause misconceptions, and who says that "intelligent" frosh don't believe them? Weren't picks by the frosh significantly different

(picks for Dabney, for example) because rumors weren't flying around?

What are some other things that have nothing to do with intelligence? Breaking the law is one thing. Intelligent people don't go into a store with a heavy jacket, then come out 20 pounds heavier in stolen merchandise. But take pirating software, for example. This is completely safe to do (because the only thing that keeps you from doing it is conscience.) So people do it, people who are supposed to be "smart." My friends really get mad at me when I bring this up, and they always give me their rationalizations. For example: "I'm not ripping them off, they're ripping me off with their prices!" "Copying software is OK, it's just

when you sell it that it's illegal." "I'm really doing the software companies a favor by pirating because if people like me didn't copy software, nobody would buy hardware, and if people didn't buy hardware, nobody would buy software."

Anyway, other things not necessarily connected with intelligence include being mature or immature, having a good or bad character/personality, and catching AIDS. That last one is for you, Bruce Kahl.

Unfortunately, it seems, our "scientific leaders of tomorrow" hold misconceptions about intelligence. It proves, I guess, that possessing intelligence doesn't exclude the one thing it should exclude by definition: stupidity.



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## The Inside World

**Blacker:** As I apologized at least three times last week for last week, I feel unobliged this week to do so again. Besides, an apology is no way to start off another masterpiece. Let us start with some quotations from great literature:

"Did you see the photograph some time ago in one of the magazines of a dog's head severed from its body, which the Russians are keeping alive for some obscene Muscovite purpose by pumping blood into it from a bottle? It dribbles at the tongue when it smells a cat. That's what all of us are, you know, out here."

— Evelyn Waugh

"Why, he wondered, swerving the car to avoid a dead pye-dog, do I love this place so much?"

— Graham Greene

Great. Now everybody is asleep or has gone on to Lloyd's geeky scrawny outstandingly clever and interesting ornamental inside world and the rest of us can talk real, as opposed to silly.

New Abbreviated HLIST

CANNES

tarzan  
 some bum  
 dandelion head  
 blisterface  
 couple o'frosh  
 couple o'junior types  
 bill the baby killer  
 HEAVEN  
 china  
 a tad of africa

HELL

randy  
 curtis  
 frosh  
 nathan

SWAMP

no comment  
 KREMLIN  
 bb !!  
 foreigners  
 weirdos

VATICAN

beautiful girls  
 more of china  
 nuke-him-as-far-as-I'm-concerned

RED LIGHT

you-know-who  
 you-know-who-else  
 and doug.

PUB

wimpy girls  
 potato-shaped boys

Okay. So we did that. Now I think it should be made clear that all this apology business is actually pretty bogus. I don't really regret writing anything all term, except maybe the nice parts about Lloyd house and Ricketts in the poem a few weeks ago. But of course it should have been suspected that those bits were supposed to be reeking with sarcasm and their sarcastic nature should have been obvious to all but the densest of readers (sorry Susan). Since I shouldn't end apologetically, either, I will include the following lyrics as a cheerful closing:

movement  
 no movement  
 just a falling bird  
 cold as it hits the bleeding ground  
 he lived and died  
 catch sight  
 cover me with earth  
 draped in black  
 static  
 white sound

— Alex

**Dabney: DEAR KEVIN**

Personal advice from future U.S. Senator K.T. Nelson

Dear Kevin:

My girlfriend and I are students at a small but highly prestigious university. Because of the small size of the student body, student life is very close-knit. While this generates much friendship and camaraderie, recently my girlfriend and I have found it to be an impediment to our relationship. Nothing we do together escapes the bitter scorn of our peers. We can not so much as sit together in our Political Science class without hearing the thinly veiled snickering of students behind us. Should my girlfriend and I tell these people to shove off and mind their own business, thus isolating ourselves socially, or should we make an effort to conceal our sex life.

Sincerely  
Socially Unsatisfied.

Dear Unsatisfied:

How can you and your girlfriend hope to gain the respect of your peers by compromising your dignity as human beings? What you and your girlfriend do to each other is your own business, and others do NOT have the right to interfere. I say do whatever you want, wherever you want, as long as it does not conflict with the penal codes of the United States.

— ( )

**Fleming:** A few minutes with Andy Rooney...

Have you ever cleaned out your closet? Last weekend, I cleaned out mine and it smelled like a fart I let last time I cleaned it out... did you ever fart in your bathing suit? You know, the kind of fart that doesn't leave by itself and so you have to wait until no one's looking and lift the back of your suit to let it out. Invariably, someone does see it bubble up: if you don't hear them giggle, it's just because they're too embarrassed... I've noticed that fat people use the hand railings on stairs more often than everyone else, so I make the conscious effort to avoid using them—just so people don't get the wrong idea... Whoever invented those single sheet toilet paper dispensers—you know, those rusty things they always have in gas stations? All I have to say is: what a pervert!... Ever notice that when someone really wants to tell you something, but has no reason to, they say: "I'm so embarrassed about what just happened!" or "I probably shouldn't say this..." This kind of bothers me now, it doesn't

continued on page 4

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# More Inside World

from page 3

make me sick, though... I wonder how many slang words there are for vomit? I don't really know that many. There's ralph, puke, chorf, and heave. Then there are the 'nice' ones: lose your cookies, get sick - like it's something you came down with! and there's also: throw up, technicolor yawn (it kind of reminds me of Disney), drive the bus, and right out of the 'born again' school is: pray to the porcelain god. Well, enjoy your meal...

Indoor Olympiad was just the diversion everyone needed from midterms week: Winters (and his greasy weenie) made his debut appearance as a Flem, the frosh class finally put together a (lame) team for crew race, to no one's surprise, Jung (see above) d'right in the middle of the entrance, and the juniors unveiled the brand new, professionally done, official pagecaps.

Fleming and Friends picnic is rescheduled for Saturday afternoon - due to Sports Day. What to expect? Profs. and Coaches that You invited, Alum\$, and food. What not to expect? Lots of hot babes, a Fleming vs. Faculty crew race, and someone (besides possibly Damage) pointing out to Profs. the people (if any) who are behind in their classes. **So Be There!**

After voting unanimously in favor of vibrators, the house rallied behind Tekanic's "no need to think small" philosophy and overwhelmingly voted to have Casino Night with Page a week from Saturday - next step: get Don King to promote it! This will be a real party, as opposed to that thing on campus last weekend - the resut of a basically whimpy house and a basically slimy house getting together.

Interhouse tennis began with a lopsided victory... two more weeks until our chance to win back Discobolus! Start getting psyched and save your grubby clothes for Animal Meal '87!

- Wayne Manor

**Lloyd:** Well. Here I am, writing the god-forsaken inside world. John and Keith have midterms, so I'm stuck writing it myself. We now return you to your regularly scheduled broadcasting. Etc.

**Tom Tom Headroom - Lecture 12 - Identical Particles:**  
[Computerized image of Professor Tombrello pops up on screen]  
Tom: Today, we will discuss i-i-identical par-par-particles. They m-must be treated dif-differently in quantum mechanics than in classical m-me-mechanics. If two par-par-particles are of different spi-spi-spi-spin... waitaminute. Is my h a i r OK? Hmhmhmhm. I think I've seen that chick in the front row bbe-efore.

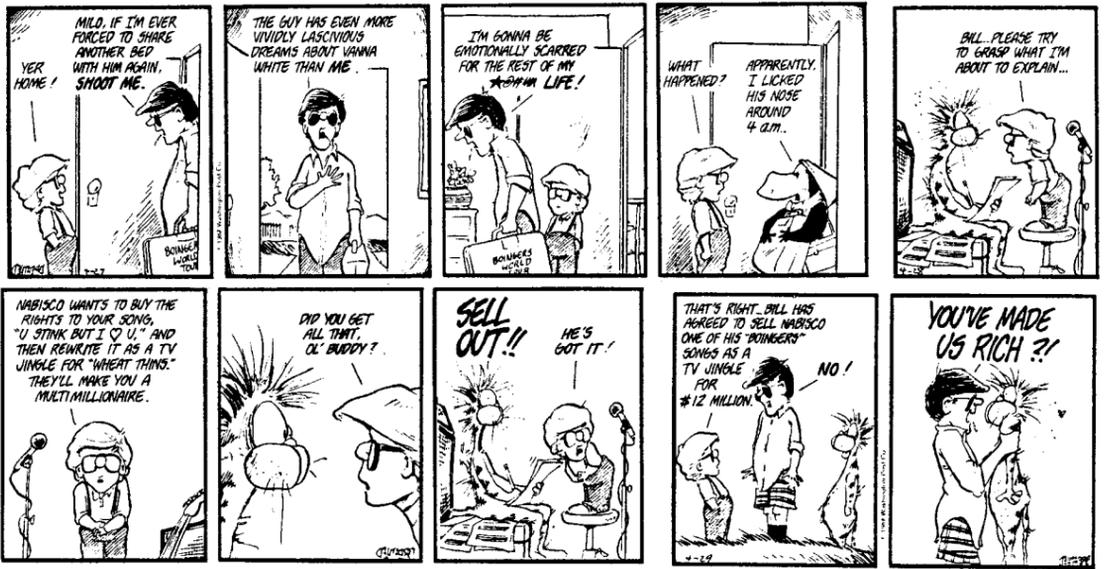
**Commercial Break:**  
[A fat armenian man and a tall college aged guy with a tuft are in some sort of kitchen facility. The kid is listening to headphones and eating peanut butter, while the man is busy ordering illegal immigrants around.]

Kid: [singing] Louie Louie, Oh, oh, oh...  
Man: Manuel, how many times I tell you put only three per plate!!  
Kid: [takes off earphones] Gary, you tight assed son of a bitch! I could make that same fuckin' meal for 50 cents. This is shit!  
Man: Ken, you are my good friend. I like the honest friends.  
[The man takes a bite out of his chocolate bar, and bits remain lodged in his moustache.]  
Kid: I can't believe you're serving this crap. What is this? Grade D? This is a shit meal, Gary.  
Man: Look, I've had about enough of you. Why don't you shut up for a change, you ungrateful...

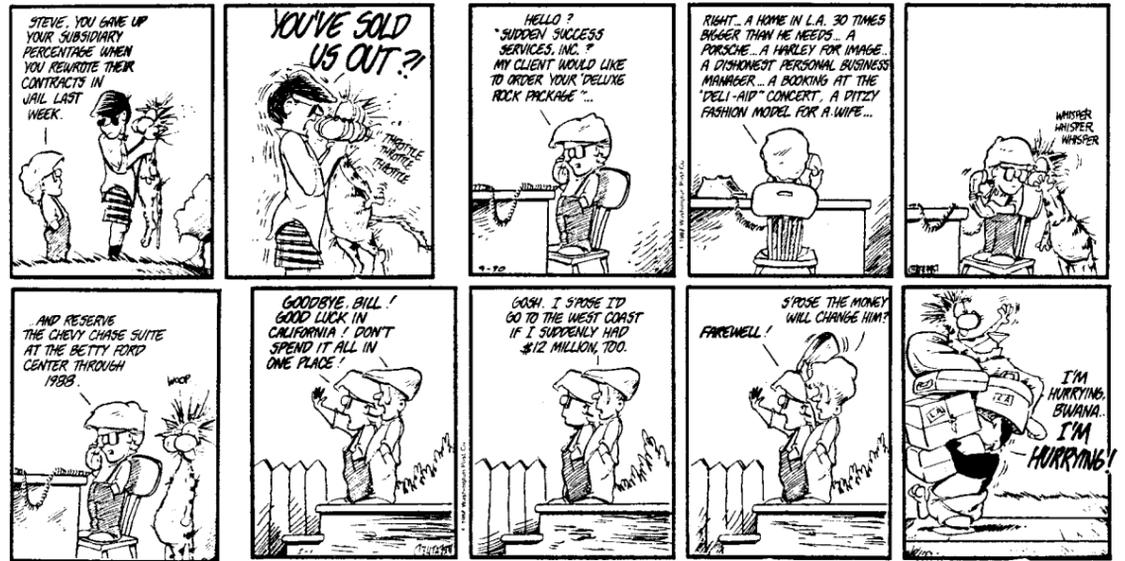
[they exchange blows]

Kid: Hey! you got your chocolate in my peanut butter.  
Man: You got your peanut butter on my chocolate.

continued on page 5



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**Breathed**



**ENTERTAINMENT**

**Bomb**

from page 3

When asked about what he did at Harvard, Oppenheimer wrote, "I labor, and write innumerable theses, notes, poems, stories, and junk; I go to the math lib[rary] and read and to the Phil lib and divide my time between Meinherr [Bertrand] Russell and the contempla-

tion of a most beautiful and lovely lady who is writing a thesis on Spinoza..." Oppenheimer was a man, after all.

There are numerous such rich characterizations of personalities that are gleaned not only from the personal papers of the subject but also from impressions given by others. One also learns of the hobbies enjoyed by these personalities: Hans Bethe's rock climbing and Enrico Fermi's stubborn insistence on using worms instead of flies for

trout fishing. It is exactly this kind of enjoyable details that downsizes the demigods to earthier proportions with all the human frailty, personality quirks, and twists of fate that bless other mortals.

Finally, the most affecting aspect of the book is the consistent theme of the capability to kill efficiently in war. Rhodes recounted the evolution of the instruments of death from the Great War. The first widespread use of the machine gun brought about a greater efficiency in killing. Tanks and biplanes had the same effect. But still, they had relatively little effect on the ordinary citizens behind the lines. When military strategists woke up to the fact that a nation at war also means a whole people mobilized for war production, the rules changed. It was inevitable that nuclear weapons came into existence, for they are the most compact and efficient mechanisms of total death.

Rhodes personally offers no concrete solution to our nuclear dilemma. But he does offer these hopeful words from Oppenheimer, who wrote, "I think in time the transnational communities in our culture will begin to play a prominent part in the political structure of the world, and even affect the exercise of power by the states." The preeminent transnational community in today's culture is science. It would be up to the scientists, and not the politicians and military strategists, to shape a new order of peace.

The alternative would be unthinkable, for the efficiency-minded may yet choose the fire. Then the ice will surely come.



The Caltech Sweet Adds—serenade an alumnus during an alum concert in Colorado. They will also be featured at the Caltech Glee Clubs' Home Concert on Saturday, May 16. They sing choreographed barbershop tunes to the delight and embarrassment of many listeners.

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**More Inside World**

from page 4

Kid: Hey, this is pretty good.  
Man: Hey, this would be cheap to make.

[jingle]

[A Korean guy with glasses holds both hands behind his back and approaches his roommate]

Garrett: Haba, guess wha I gah in my han.  
Haba: What?  
Garrett: No man, geh! Geh ri now!  
Haba: No, I mean what did you say?  
Garrett: Oh, guess what I have in my hands.  
Haba: A pizza?  
Garrett: Oh, you ri. You rai.  
Haba: I'm right?  
Garrett: No, I'm bee sar cas ti. Kaaaaannng.  
Haba: Oh. Well, what is it then?  
Garrett: A new doo. Doo doo doo.  
Haba: What?  
Garrett: A new douche, man. Doodgze dzzzze douche.  
Haba: Is this a parody of that damned Massengil commercial?  
Garrett: Oh, you ri. You rai.

[back to Tom]

Tom: Hurm. Where was I? Oh ye-ye-yes, my hair. I once read a book about this guy with a plastic helmet for hair, but that's another story. Uh-heh. Heh. Another story, get it? Uh, it looks like we're out of t-t-time. Those darned comm er c i a l s. Well, I guess this is it. They turn those cameras off, and you turn your set off, and I just sit here. In memory. Waiting for the next show. It's OK. I've got ways of keeping myself busy... Hey! HEY! hey. Don't even think it. Remember, I don't have any hands. Till next t-t-time. Identical particles, heh. Who needs 'em.  
—Enos

Ricketts: Nonsense word of the day is "blfrt." Not to be confused with "bullfart," which is a very serious word that should not be taken lightly. More on that later. Don't go to LAX without money, especially if you do have money and don't know it. Just remember, a buck in the car is worth two on the phone.

Lloyd. Ricketts. Party. We had a reporter on the scene. So here's...  
The Shroom Social Gossip and Literary Art Column Section—  
Ta-Da!

Hello, dahling. The Lloyd-Scurve party was Saturday night, and it was simply THE social event to attend. Sam W. was spotted, looking stunning, as usual, and with his hair combed, too. So I don't have to tell you how important this event was. His cold, blue eyes pierced me like needles. Or something. Vito the Man was there, too, for heaven's sake! He, sadly, was also wearing shoes. Remember, loyal readers: you can't get laid at a Scurve party unless you have bare feet! Also, a few personal fashion tips to the Awesome Vito Himself: First, lighting the hair/crotch of your hosts on fire is not very polite. Second, if someone opens their heart (or drops their pants) to you, you JUST DON'T WALK AWAY. This is the ultimate faux pas. Last, Vito: If you're going to wear an Oxford shirt, fashion calls for it to be buttoned all the way up. Macho is out! Ta-ta!

—Socialite Shroom

P.S.: Did you have a tough time dancing? I did. There was a lot of glass on the floor...

Thanks, Tom, for those words to live by. I'm sure you've made a friend for life. In other Ricketts Hovse news, the Communist Menace has gained a foothold in Scurveland. Those Godless Commies have a refrigerator full of soda up in L.D. But don't worry, my fellow Americans. They won't stand up against the capitalist might of Uncle Joel. And our courageous boys in maroon will soon be restocking that bastion of democracy, the Soda fridge.

Other naughty bits: Ross and Joe Saturday night demonstrated that newest of dance crazes, the balloon dance, while Big Dave Nice showed us the ever-popular Dancing With Myself routine. This week's hot date was between Randy and Heidi, but inside sources are NOT talking. The Revenge of the Man-Eating Fire Extinguisher Boxes is playing now in Room 7. Our hero, Andrew, will eventually have the menace taken care of. And a big hello to Katryn's parents. She just wants you to know that she's been a good girl. She doesn't stay up late. She's up every day by seven. She finishes all her homework a week early. And she doesn't talk to strange people. Good thing there are none of those around here. But there is one problem. This guy that's taking her to the Formal. He is bad news. I wouldn't let MY daughter go out with him. He doesn't even wear SHOES most of the time. Better she should go to this thing with a nice, innocent Inside World reporter. Oh, well. Nothing's perfect. Sigh.  
—The Lil' Cook-Man

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## BUSINESS

## Mutual Management

by the Student Investment Fund

*First in a series on investing, from the Student Investment Fund*

Mutual funds are managed portfolios of securities, usually common stocks and bonds, run by an investment firm, and owned by a group of investors who have purchased "shares" of the fund. Each share is a fraction of the total assets of the fund. The total assets of popular mutual funds vary from a few million dollars to over seven billion dollars (for Fidelity Magellan). The investor pays for management of his money with a fraction of the fund (typically about one percent per year) which the managing firm keeps.

Mutual funds have become extremely popular over the last five years, as reduced prime interest rates have eroded returns available in money market accounts and bank CD's. More than 600 billion dollars is currently invested in mutual funds, more than twice the amount in savings accounts. This popularity is understandable given that the rates of return from good mutual funds have exceeded 15% per year over the past three years, compared to the current bank interest rate of about six percent on short term CD's.

Mutual funds are also attractive for the small investor as an alternative to direct investment in the stock market. Few people have the time and resources to manage a balanced portfolio of funds. A mutual fund investment can qualify as an Individual Retirement Account investment, too. The managers of funds have access to market information far more quickly than

distant investors, and can take advantage of short term market conditions. In short, mutual funds offer a measure of safety and stability, compared to a small stock portfolio.

There are several different varieties of mutual funds, distinguished by the goals of the fund, and the types of securities it can invest in. The lowest risk funds include the growth and income funds, total return funds, and the long-term growth funds. Some moderate risk funds emphasize maximum capital gains. In the highest risk category are the sector funds, which invest specifically in a single industry. Gold funds are an example. These are generalizations, since each fund has a slightly different strategy, and the most conservative strategy can fail to protect investors from loss in a sufficiently volatile market.

To learn more about mutual funds, look for general articles in business and money management magazines. The 1987 issue of Money Guide, a special issue of Money Magazine devoted exclusively to mutual funds, is a particularly good resource. The performance of the larger funds may be monitored in the LA Times business section. For the serious investor, several periodicals devoted exclusively to rating and picking mutual funds are available. One such is the Growth Fund Guide, published by Growth Fund Research, Box 6600, Rapid City, S.D., 57709; it costs \$85 a year. To get information about specific funds, simply call the fund's information number, which is almost

always toll-free. Several funds advertise in the *Times*, and their numbers are in the ads.

Once you have picked a fund, you'll need to get an account form from the fund, and send it with your check to the fund headquarters to buy your shares. The necessary form is included with the information packet available from the fund. The funds deal in fractional shares, so there's no worry about "odd lots" or trying to get shares in certain multiples. Most mutual funds have a minimum investment of \$500 to \$2000. Some of the funds charge an entry or exit fee, called a "load". This is usually three to eight percent, and goes toward running the fund. Funds with no explicit entry or exit fee are called "no load" funds. There is no difference in net performance, on average, between load and no-load funds.

To give a starting point, several well thought of total-return funds are Evergreen Total Return (800) 635-0003, and Strong Total Return (800) 386-3863. Growth funds include Legg Mason Value Trust (800) 822-5544 and Neuberger and Berman Partners (800) 367-0770. Income funds include Hutton Bond and Income (800) 334-2626. A strong maximum capital gains fund is Pacific Horizons Aggressive Growth (800) 645-3515. Fidelity Group (800) 544-6666 offers a variety of sector funds, as well as an impressive group of income, growth, and tax free funds.

A final caveat: investing in mutual funds is not putting money in the bank. It carries the risk of losing a portion of your investment, as does any investment in the stock market, in exchange for an opportunity to realize greater gains than available in strictest safety.

## Brin

from page 1

the same origins as the gaudy plumage of a bird of paradise or a peacock's tail. Sexual selection. In other words that about a million years ago, women decided brains were sexy. This, of course, leaves the difficult question, why did they stop?

The main thrust of Brin's lecture was on the Myths that make up the basis of our society and why they indicate we have the first non-juvenile human society. Our fairy tales, our TV sitcoms preach open-mindedness and toleration, as opposed to the vengeance ethic of Farsi, or the Macho of latin cultures. Brin rates our society as adolescent. He says that ours is the first society that is not primarily conservative. As an example he gave the seminar at Caltech where pulsars were announced. One of the hypotheses the discoverers put forth was that the extraordinarily regular radio pulses were beacons. This ran contrary to orthodox theory which at the time was anti-extraterrestrial intelligence. That it was nevertheless included as a possibility, Brin contends, shows that our society is more willing to

## Hood

from page 1

was named California Scientist of the Year in 1985 by the California Museum of Science and Industry. His recent honors include the 1987 Man of Science Award from the ARCS (Achievement Rewards for College Scientists) Foundation, Inc., Los Angeles Chapter, the 1987 Award for Medical Innovation from the Louis Pasteur Foundation/Los Angeles, the 1986 Prize for Biochemical Analysis given by the German Society for Clinical Chemistry, and the 1984 3M Life Sciences Award.

The annual meeting of the three biomedical research organizations focuses exclusively on research findings related to the cause, prevention, and treatment of human diseases. Among the topics will be reports on AIDS and cancer research, auto-immune and nervous system disorders, and bacteria-caused diseases.

accept the bizarre, the new, than any other in history.

Brin also contends that our society is the most tolerant to have existed and that this is a sign of our progress toward maturity. He advocated, "The complete destruction and crushing of any society who's basic myths do not espouse toleration."

Brin's lecture was jointly sponsored by the Caltech Y and SPECTRE, the Caltech science fiction club. The lecture was held in 22 Gates and a person with a vested interest in high attendance at the lecture placed the crowd at eighty-six people.

CALTECH  
public eventsZANY CAMBRIDGE BUSKERS  
RETURN TO CALTECH

No category of music is sacred to the Cambridge Buskers who will perform in Beckman Auditorium tomorrow night at 8 p.m. Michael Copley and Dag Ingram use an accordion and 20 other wind instruments to spoof everything from classical music to Scott Joplin rags.

Catch the Cambridge Buskers in a sneak preview today at noon on the Quad.

CIT student tickets to Saturday night's concert are priced at \$7.50-6.25-5.00; \$6.00 rush tickets go on sale the day of the show. CIT faculty and staff ticket prices are \$13.00-10.00-8.00. They may also purchase TECHTIX, for the same price as CIT student tickets, today between noon and 4:30 p.m. at the Caltech Ticket Office.

The lush, colorful countryside and cloud-capped peaks of "Tahiti" will be featured in an Armchair Adventures travel film tonight in Beckman Auditorium. Chris Borden personally narrates his film beginning at 8 p.m. Highlights include the picturesque waterfront city of Papeete; white sand beaches; clear, multi-colored lagoons; and Captain Cook's monument at Point Venus.

CIT student tickets are priced at \$6.00. Regular admission tickets are \$7.50-6.00.

Sunday, May 3 brings the Meliora Quartet to Beckman Auditorium and the Coleman Chamber Music Series. Beginning at 3:30 p.m. this ensemble will perform Mozart's Divertimento No. 3 in F Major, K. 138; Beethoven's Quartet in C minor, Op. 18, No. 4; Shostakovich's Quartet No. 7; and Dvorak's Quartet in F Major, Op. 96 ("The American Quartet").

There are still free tickets for this concert! Fifty free tickets and 50 tickets at \$6.00 each became available for this concert to CIT students last Tuesday at the Caltech Ticket Office. There is a limit of one free ticket and one at \$6.00 per CIT student I.D. Tickets are regularly priced at \$15.00-13.50-12.00-10.00.

"Expert Neural Systems" is the title of the Earnest C. Watson Caltech Lecture to be held on Wednesday, May 6 at 8 p.m. in Beckman Auditorium. Dr. Terrence J. Sejnowski, Cornelius Wiersma Visiting Professor of Neurobiology at Caltech and Associate Professor of Biophysics at Johns Hopkins University, will deliver the presentation.

Admission to this lecture is open to the public, free of charge.

Tickets to all Caltech Public Events can be purchased at the Caltech Ticket Office, located just north of the Beckman Auditorium parking lot. For further information about the exciting Public Events scheduled this season, call campus ext. 4652.

## WEEKLY SPORTS CALENDAR

Day	Date	Time	Sport	Opponent	Location
Fri.	5-1	1:00PM	Tennis (M)	SCIAC Tournament	Caltech
Fri.	5-1	TBA	Tennis (W)	SCIAC Tournament	Whittier
Sat.	5-2	9:00AM	Tennis (M)	SCIAC Tournament	Caltech
Sat.	5-2	TBA	Tennis (W)	SCIAC Tournament	Whittier
Sat.	5-2	12 NOON	Baseball	Pac. Coast Baptist Bible College	P.C.B.B.C. (2)
Sat.	5-2	2:00PM	Track	SCIAC Championship	Pomona
Sat.	5-9	4:00PM	Track	Occidental Invitational	Occidental College

## Alumni Day

from page 1

Clauser, the Clark Blanchard Millikan Professor of Engineering, Emeritus, will describe his adventures in this endeavor, and will give some insights into what the future may hold for the design of the America's Cup contenders.

Alumni will view a JPL space exhibit and a demonstration of a newly developed backpack instrument that enables geologists and geobotanists to scan the spectra of rocks, soils and vegetation at wavelengths outside human vision. They will also watch episodes of Caltech's award-winning television course in physics, "Beyond the Mechanical Universe," visit an exhibit of recently published books by members of the Caltech community, and tour the mineral and gem collection, one of the most extensive university collections in the country.

In the midst of a day so packed with activities, alumni may have little chance to reflect on the 50 years of tradition that contribute to Seminar Day.

Few will recall that so many alumni (almost 400) turned out for the first program that larger rooms had to be found and simultaneous sessions arranged to accommodate everybody. The guests heard from a distinguished group of speakers, three of whom would later become Nobel laureates and some of whom

would give their names to campus buildings.

The first Seminar Day was a two-day affair and featured a Saturday night Glee Club concert, after which the alumni were lodged in the student houses, the Athenaeum, and private homes, so they could continue with the event on Sunday. Each alumnus was limited to one visitor. A popular object of attention was the astrophysics workshop, where the 200-inch and auxiliary mirrors destined for Palomar Observatory were being ground. The guests also ogled a tenth-scale model of the giant telescope while a staff member explained its potential.

Among the speakers were Seeley G. Mudd on "The Cancer Problem," Henry Borsook on "Vitamins in Health and Disease," and Alexander Goetz on "The Mystery of Absolute Zero." Linus Pauling led a chemistry seminar, Carl Anderson spoke on "The New Particles in Physics," and Thomas Hunt Morgan talked on "What Genetics Means."

Aeronautical engineer Arthur Raymond delighted guests at dinner in the Pasadena Athletic Club on "The New Douglas DC-4," and John W. Price, Caltech YMCA secretary, conducted Sunday morning chapel.

By all reports, guests found that first Seminar Day to be a great success. Fifty years later, alumni can look forward to a program even more rich and varied.

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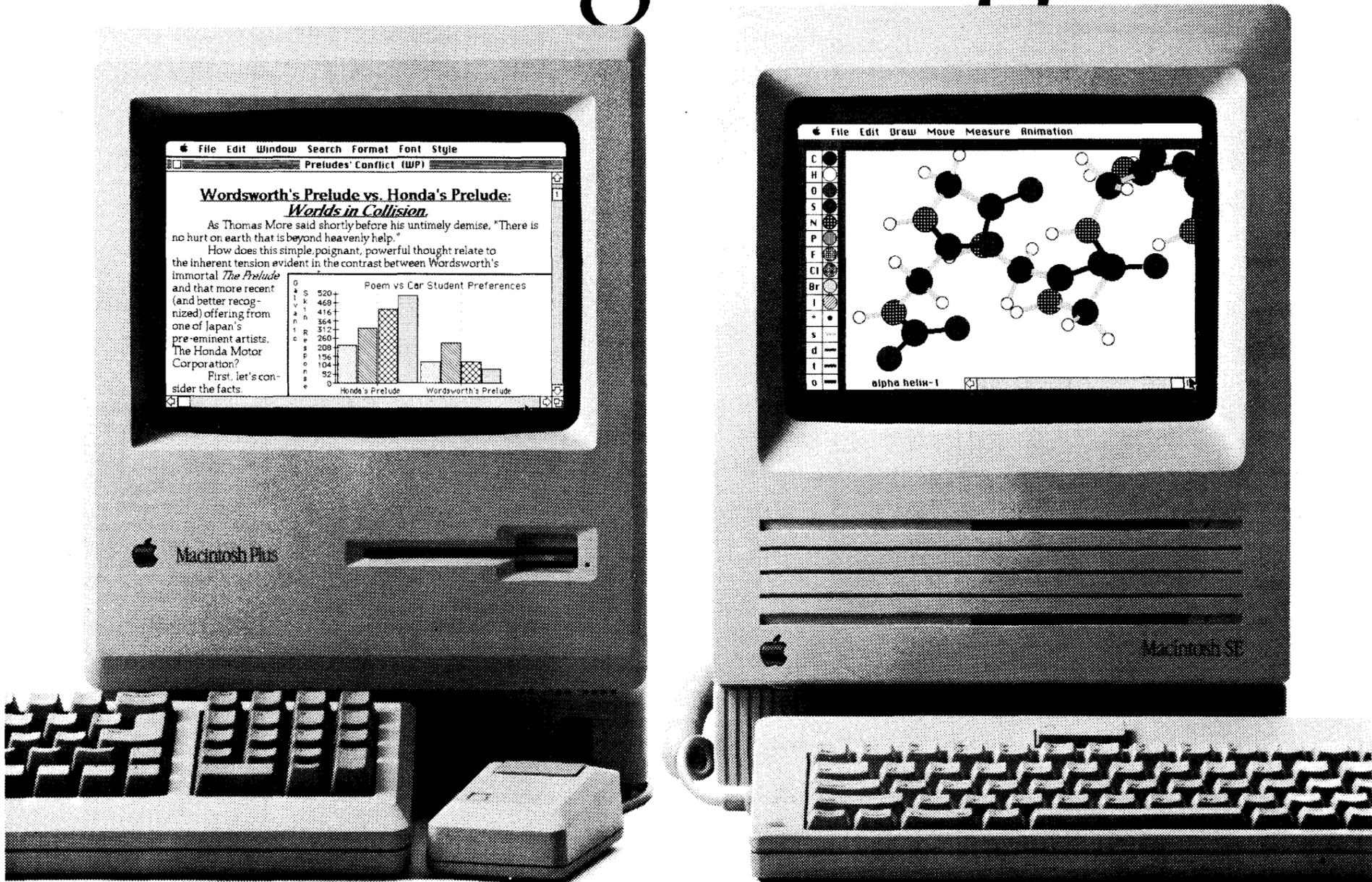


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# WHAT GOES ON

Announcements for *What Goes On* must be submitted on an announcement form (available outside 107 Winnett) or on a plain piece of paper. Please indicate the date(s) you want the announcement to run. Send announcements to 107-51, or put them in the mail slot in the door of 107 Winnett. Announcements must be received by the Tuesday prior to publication.

## GSC Annual Meeting

In accordance with the GSC By-Laws, the GSC Annual Meeting will take place at noon on the first Thursday in May, which is May 7th. The meeting will be held on the second floor of Winnett, in Clubroom 1. All Caltech graduate students, as members of the GSC, are invited to this meeting to voice any questions or concerns they may have.

## Be A Part Of The Fun

KELROF's coming once again! KELROF is a race with 10-person teams which compete by running consecutive miles for 24 hours. This year's KELROF will be from 9:00 am May 16th to 9:00 am May 17th. Get together with your 9 favorite runners (or people) and give a list of your team to James Shih (1-60, 578-9370). All members of the Caltech community are encouraged to participate. It's real, it's fun, it's exciting!

## Move It Or Lose It

All students who have belongings currently stored in the Blacker/Ricketts storage room in the South Complex basement should remove those belongings no later than Friday, May 15. Items can be stored in the main student trunk room in the South Complex basement. Entry keys for both areas can be obtained from House Presidents, House R.A.s or checked out from the Housing Office.

Clearing of the storage room is necessary to accommodate Dabney and Fleming student needs during the upcoming summer rehabilitation of those two houses.

Items not removed by the May 15th date will be removed and disposed of by Housing Department staff.

Thank you for your cooperation.

## Help Memorial Day

Please contact Nancy Drehwing (x3691) if you are interested in helping with a Memorial Day Picnic at the athletic field on May 25. (when else?) Duties to be assigned include organization and officiation of soccer, softball, inner tube water polo, and clean-up.

## Free Athenaeum Meal

ASCIT needs volunteers to address invitations to the spring formal and to man the registration booth the evening of May 8. Possible payment for calligraphy work and free dinner for booth attendants. Call x3691 or send a note to Nancy Drehwing, 1-60, if interested.

## Evans Opens SPS Nominations

Nominations for the Society of Physics Students officers are now open. The offices are President, Vice President, Secretary, and Treasurer. Anyone is eligible for nomination, and should contact Will Evans (449-2565) or Tom Gould (795-4049) for verification. The nominations close on Friday, May 14. Exactly no (0) late nominations will be accepted.

## The Deadline Is Today!!!!

The application deadline for Summer Work-Study is today, May 1. Today is also the priority deadline for all 1987-88 financial aid. All application materials described on the 1987-88 checklist in the application packets mailed to returning students in January are due in the Financial Aid Office today.

## GSC Softball

It's time to start organizing for summer softball! Whether you are an awesome player or barely coordinated, there is a place for you in GSC Softball. So start recruiting, and get together a team!

There will be an organizational meeting at 6 pm on Thursday, May 7th, in the basement of the Athenaeum. Each team must send one representative. Individuals seeking a team to join should also show up at this meeting. Contact Patti Pratt, GSC Sports Commissioner (x6718, 202-6), for further information.

## Koreans At Caltech?

Interested in meeting other Koreans at Caltech? We are organizing a small "get-together" dinner on May 2nd—that's TOMORROW! Contact Paul Lee (578-9171) or Kyuson Yun (x6829) for more details.

## Student Space Group Meeting

On Tuesday, May 5 at 7:30 pm, Caltech SEDS will be showing Apollo 17 and Shuttle 61-B movies in the Y Lounge. We will discuss our upcoming star party and possible tour of JPL. All members of the Caltech community are welcome to attend.

## Fabulous Prizes!

The Children's Center at Caltech is having its 7th Annual Spring Fundraiser drawing on Friday, May 8 from 5 to 7 pm in Winnett Student Center. Tickets are on sale now each day at noon outside of the Bookstore, or by calling 356-6860. Drawing tickets are \$2.50 each.

## Time's Up For Foxes

There will be a showing of "Schonzeit für Füchse" on 4 May 1987, Monday, in Baxter Lecture Hall at 7:30pm. A précis: Two young men in their late twenties suddenly realize that they have reached the peak of their lives. They start protesting against their parents' way of life, not in open rebellion but rather in the form of angry remonstrance. One finds consolation in the vague dreams of his youth, the other turns a cynic. Both however, are coming to realize that the times of "chasing around like young foxes" have passed forever. Directed by Peter Schamoni and starring Helmut Fombacher, Christian Doermer, and Andrea Jonasson.

## Rights In South Korea?

The Pasadena chapter of Amnesty International will present a 20-minute video about the situation in South Korea, followed by a presentation by a distinguished speaker on South Korea: Lee Cable. This event will take place in the Caltech Y Lounge on Thursday, May 7 at 7:30 pm. It is open to everyone.

## Tourney and Revel

Celebrate spring! Tomorrow, May 2nd, the Caltech Medieval Renaissance Society will be having a Tournament (in Tournament Park, of course) and, during the evening, a Revel and potluck banquet (in Dabney Hall). For more information, contact Doug Bloomer (x6830) or Amy Carpenter (794-2612).

## See The Planets

Explore brave new worlds (or see pretty pictures of nearby ones). Seek out new life and new civilizations (or find out how life may have developed). Boldly go where no man has gone before! (Or up the stairs by the bookstore, anyway. That's right—Wednesday's (May 6) noon update will feature Dr. Ed Stone discussing Voyager and the recent, and possibly future, planetary missions. That's Wednesday, May 6 at noon in Clubroom 1, for those of you who spun out and crashed partway through the parentheticals.

## Palestinian Significance

Dr. Edward Said of Columbia University will present a free public talk on "The Significance of the Palestinian Question," in Ramo Auditorium on Thursday, May 14 at 8 pm. The lecture is sponsored by the Caltech Y and the Institute's Division of the Humanities and Social Sciences.

## Feynman On Feynman

The Caltech Management Association presents Dr. Richard P. Feynman on Tuesday, May 12 from 5-6 pm in Beckman Auditorium. This talk, also open to Caltech staff and retirees, will include Dr. Feynman's behind the scenes views of the Challenger Commission's investigation of the Shuttle disaster.

## Ametek Luncheon

Mr. Dennis Stanfill, who heads Stanfill, Doig & Co., will speak on "Leadership: Can the Force be with You?" at the AMETEK Leadership Luncheon to be held at the Athenaeum on Thursday, May 21 at noon. The hosted luncheon is the first of a series of events, sponsored by AMETEK Corp., aimed at developing the leadership potential of Caltech students. It will be followed by workshops, roundtables and possibly internships.

Please sign up as soon as possible at the Caltech Y as there is room for only 100 students (graduate & undergraduate).

## Cerebus Books Are In!!!

The Cerebus *High Society* books are in, as is my horrendous Visa-bill, so if you ordered one aeons ago, please contact me (Peter Alfke) at x6828 to get yours. The price is \$17 bucks.

## Piano Recital

Caltech senior Mickey Spiegel will present a piano recital on Thursday, May 7 at 8:00 pm in Dabney Hall Lounge. The program will include works by Beethoven, Chopin, Ravel, and Franck Variations with second piano accompaniment. The public is cordially invited, and admission is free. This recital is sponsored by PA 35.

## Expert Human Performance

Dr. Terrence Sejnowski, visiting professor of neurobiology at Caltech, will present a free public lecture on "Expert Neural Performance" on Wednesday, May 6 at 8 pm in Beckman Auditorium. His talk will include a demonstration of NETalk, a neural network model that can be taught to pronounce English words. Tickets are not required.

## Summer Employment

Summer employment available in the Housing Office. 20-40 hours a week, flexible work schedule. \$5.50/hour. Free housing during summer. To apply, contact Chris Mihos by May 15, at 356-6174 (office) or 440-9442 (home).

## CLASSIFIED

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