Vote Here

The California Tech

Volume XCV, Number 30 | Pasadena, California | Friday, June 3, 1994

KELROF

Bagles and Leg Cramps

by Matt Metz

KELROF XV took place last Saturday, May 28, with traditional delays making the start about 9:20 a.m. An unusually low number of participants showed up this year, most likely as a result of complications with publicity. There were twenty runners in comparison with last year's 45. However, once word about the load of Goldstein's Bagels that were on the premises got out, there was a steady stream of spectators, willing to help out with the surplus.

Chris Carey and Tom Dmukaskas decided to run a two-man team, aptly named "Team Idiot" by this race director. The two held up quite well throughout most of the 24 hours of the relay. "Team HUGE", the only full team this year, was Walter Brisken, Tom Maccarone, Tessa Miller, Lena Petrovic, Dave Relyea, Cailin Henderson, Betsy Barton, Janis Change, Radhika Reddy, and Jeremy Gawle. The members of "Team More Idiots" were Kumar Raman, Jessie Shue, Tom Meyer, James Dooley, Julian Jamison, Ron Steiger, Lily Chang, and Schuyler Cullen, who, much to his demise, showed up to watch a little too early and was able to be added to this relay (as long as a team has not gone through the entire cycle of runners, a person can still join, unless the team is full with ten people).

Seniors Betsy Barton and Julian Jamison shared a bit of camaraderie as the soreness started to set in, observing that there were the only two four-year veterans of KELROF present. At around 11:00 p.m., Jessie experienced an extreme loss of hair. During the evening, Tessa's family, including her Olympic sister Shannon Miller, paid the runners a visit (it must have been the bagels).

Teams' mileage was the following: "Team Idiot" with 100, "Team HUGE" with 141.5, and "Team More Idiots" with 188.75. Kudos to the steel-willed participants. Thanks to ASCIT, the Deans, and the Y for funding the relay, and to all of the spectators for moral support. Thanks also to Ned Bowden and Kumar "$99" Raman for helping to organize KELROF.

KELROF is a Caltech Tradition passed on from one year to the next. The race is always fun for all, and this year's event was no exception.

Details on Today's Elections

by Cedric Hobbs
ASCIT Election Chairman

The bylaw/class officer/ASCIT President election will be held today, Friday, June 3, 1994. Only ASCIT members may vote on the proposed bylaw changes and on the ASCIT President. *All* current sophomores and juniors as well as *returning* seniors may vote on their respective class's officers for the following academic year. Ballot boxes will be placed in the lounge area of each house from 10:00 a.m. to 10:00 p.m.

Three types of ballots will be available: one for all freshman and graduating seniors, one for all sophomores, and one for all juniors and returning seniors.

There will be seven proposed bylaw changes on the ballot. Copies of the proposed amendments will be place near the ballot boxes. In addition, the May 27 edition of *The Tech* lists each amendment. Note that a two-thirds vote is required to pass each amendment.

Questions concerning the election should be directed to Cedric Hobbs, the ASCIT Election Chairman at *cedricit@ugcs*, MSC 260, or 568-0001.

The candidates for ASCIT President and Junior and Senior Class officers are as follows:

ASCIT President
Jasmine Anderson
Michael Benedetti
Mike Coward
T.J. Creath
David R. Derkits
Brian Katon
Jonathan McDunn
Penny Sherman

Senior Class President
Marcel Bergmann
June Fujimoto
Gisela R. Sandoval
Tom Zavisca
Rich Zitola

Senior Class Secretary/Treasurer
Tobé Corazzini
Kristin Polito
Bert Sommar

Junior Class President
Nestor Ocampo
Srdjan Sobajic

Junior Class Secretary/Treasurer
Tom Maccarone
David Plurad

The Candidates Speak:

ASCIT President Statements 2
Senior Class President Statements 3
Senior Class Secretary/Treasurer Statements 3
Junior Class President Statements 3
Junior Class Secretary/Treasurer Statements 4

✓ Vote for the Big T ✓

by Christy Esau

On the ballot today is an ASCIT bylaw change which would raise the Big T fees from $10/term to $12/term. This increase would take effect in the 1994-95 school year.

As editor of the Big T for two years and as current business manager, I urge everyone to vote "YES" on this change. The Big T has found it increasingly difficult to maintain the quality of the yearbook with the revenue it currently receives. It has simply been unable to keep up with inflation. For this year's book, the editors have been forced to reduce the total number of pages in the book, meaning a smaller seniors section and fewer pages in the house sections. The number of color pages has also been reduced this year. Next year's book may have to be reduced even more if additional revenue isn't generated.

Please support the Big T and vote "YES" today.

Message from the Mail Man:

Undergraduates not returning this fall should return their mailbox key to the mailroom by August 15; changes of address for the summer should be turned in by June 10.

This Was the Year That Was — Or Was It?

Awards Given at Math Banquet

from the Math Office

Several Caltech undergraduates were honored Wednesday night, May 18, at the annual Mathematics Awards Banquet held at the Athenaeum. The E.T. Bell prize, consisting of a $500 cash award and a certificate, was awarded to Julian Jamison for his original paper, "Le Chatelier's Principle in a Lattice Framework." Ryser Fellowship recipients, Debbie Leung and Roman Muchnik, were introduced by Professor Michael Aschbacher. Also introduced was Amalavoyal Chari, recipient of the Fredrick J. Zeigler Memorial Award. Professor R. M. Wilson presented a medal, certificate, and a $1000 check facsimile to Putnam Fellow, Wei-Hwa Huang, who earned these honors by scoring in the top six in this year's Putnam mathematical competition. (The food was good and the speeches short; a good time was had by all.)

Engineering Awards Given Out by AT&T

from the Dean's Office

On Thursday, May 26, the Tenth Annual AT&T Research and Development Awards of $500 each were presented to two Caltech undergraduates. AT&T donated this money to recognize sophomores and juniors in the Division of Engineering and Applied Science for academic excellence and service to Caltech and the community. The awards were presented over lunch at The Athenaeum by Susan Luth of AT&T to Angie Bealko, sophomore in Electrical Engineering, and Cedric Hobbs, junior in Engineering and Applied Science.

Undergraduate Excellence Awards Presented

from the Dean's Office

The Green, Fröhlich, Hägen-Smit, and Sigma Xi Awards were presented on May 27, 1994, at a luncheon in The Athenaeum. Robert Fisher, a senior in Physics, received the George W. Green Prize for his creative research with Professor Tom Tombrello. The Jack E. Fröhlich Memorial Award is for outstanding juniors in the top 5% of the class. Jonathan Weinstein was selected this year. Zackary Berger won the Arie J. Hägen-Smit Memorial Award, which is given to a chemist or biologist who has shown academic promise and has made recognized contributions to Caltech. The Sigma Xi Award is given to a senior selected for an original piece of scientific research. This year, Ned Bowden won for his research activities with Professor Robert Grubbs.

Shepard Essay Awards Decided

Congratulations to Cherish Bauer, Brian Brewington, Ross Brown, Hou-En Han, S. Asif Hassan, Tuan Hoang, Kenneth Lee, Ellis Meng, Jerry Shan, and Jane Wei, the recipients of the 1994 Don Shepard Essay Awards. Each winner will receive a monetary award ranging from $500 to $1,000 which will enable them to explore their extracurricular interests or hobbies, or pursue life-long dreams in areas such as theater, music, travel, which may not have been possible before due to the expenses of tuition and related institute costs.

Jasmine Anderson

There are quite a few issues currently facing the ASCIT Board of Directors that will have a direct impact on how student government will be run in the future. Since all the candidates in this election are well qualified, I would like to focus on these issues. I believe that student government is an important part of life at Tech, but only if it is a government that works.

One aspect of a working government is that all branches cooperate with each other to form an integrated body that responds well to the concerns of the students. Issues that cross the domain of both bodies of power (the BoD and the IHC) should not be delegated to one or the other, but be jointly handled. I know that there are changes that could be made to improve the current system, and I am willing to listen to any suggestions. I would like to continue the practice of holding office hours so that I can be responsive to the suggestions of the students, rather than initiating my own personal ideas for change. My job as ASCIT President is to represent the student body as a whole, not to fulfill my own personal agenda. From contact with past and present members of the BoD, I feel I understand what the responsibilities of the office are, and I know that I can meet the expectations for this office. After all, I know exactly what it's like to get up at 6 am on Friday morning to go get donuts.

Please contact me via e-mail *jasmine@cco* if you would like to discuss anything.

Michael Benedetti

I'm running for ASCIT president because I would like to see ASCIT changed for the better, and complaining to the current BoD hasn't helped.

My first and only experience in student government at Caltech was as Editor of this very newspaper. It was during my tenure as Editor that I first became aware of some of the problems with the way ASCIT did its business. Although the BoD were reasonable people, they could have been more responsive to the needs and opinions of the student body. I think that this problem was from lack of communication—there weren't many angry students at BoD meetings, and there was little public discussion of ASCIT issues.

Today, things are different. Plenty of people go to ASCIT meetings to complain, and there are extensive discussions on the Caltech newsgroups. Unfortunately, the new BOD has not become any more responsive.

For those of you who don't know me, I'd like to give you an idea of where I stand on certain issues and how I might vote in the future. Since nobody knows what the big issues of the next nine months will be, I'll tell you what I think of the present ones:

* *Mandatory ASCIT membership*: No one should be forced to be an ASCIT member. If a person disagrees so strongly with the BoD that he wishes to leave ASCIT, that choice should be respected.

* *BoC Bylaws*: Currently, non-ASCIT members can vote for BoC Chair. It is only a small step to allowing all undergrads to vote on BoC-related bylaws. As long as all undergrads are a part of the Honor System, all of them should have a say in how the BoC is run.

* *Remaking government*: ASCIT needs to be changed. Although the current system of bylaws could make for an effective student government at Caltech, it doesn't. We need to figure out why and fix the problem.

* *Club funding*: ASCIT should try to fund more clubs that want to purchase durable, if expensive, equipment. Things like the Jam Room and SPECTRE library will benefit students for years. Conversely, less money should be given to clubs that just want to buy food for their meetings. Both types of clubs are important, but it is more reasonable to expect club members to buy snacks than to buy permanent equipment.

If you would like to see concrete improvements in the way that ASCIT operates, vote for me today.

Mike Coward

So, why am I running for ASCIT President? Simple: I believe that I can do as good a job, or better, than any of the other candidates. The past couple of months have been tough on ASCIT—there have been conflicts between ASCIT and the IHC, and conflicts between ASCIT and some of the students that it represents. Many of these conflicts have been caused by the apparent inflexibility of ASCIT—a seeming unwillingness to compromise. I believe that ASCIT should coexist with the other forms of student government that we have—not try to be dominant over them. Towards this end, if elected, I will bring the experience that I have gained both in running the ASCIT movies and in holding various house offices and use it to try to improve the relationship between ASCIT and the rest of the student body.

T.J. Creath

Good morning, my name is T.J. Creath and I am running for the position of ASCIT President. Before I get too far into this statement, I would like to end one rumor before it starts: although I am a senior I will be back next year.

For those of you who do not know me, I was Ruddock House President from February 1991 to 1992. Although I have never been a member of the ASCIT BoD, I do have experience in student government as a member of the IHC.

Student government on this campus, or any other, has a simple job: to represent the students and to act on their behalf. The student government system on this campus is capable of doing the job effectively. I've seen it work. But it only works if the members of the IHC and the BoD concentrate on their jobs and not on fighting amongst themselves. It is not important who does what or who gets the credit. What is important is getting the job done and getting it done well.

In the five years I have been affiliated with Caltech, there has never been a worse time for this IHC-BoD bickering to occur. This should be a golden opportunity for the students to gain some respect from the administration. With the arrival of Sharon Slavyn and Tom Mannion, we have a great opportunity to improve the quality of student life. If we can show that Caltech students are intelligent and reasonable people, we have two new sympathetic ears in the administration. Instead, our student leaders spend eight-hour meetings arguing over territory and quibbling over commas. A meeting with Gary Lorden is no place for the IHC Chairman and the ASCIT President to argue with each other; they should both be arguing the students point of view to the administration.

I believe that the ASCIT BoD has lost sight of their objective. They do not always keep student opinion and benefit in mind. The bureaucracy that was once a tool to help them reach their goals has now become the goal itself. The BOD meetings should not be nine elite people voicing their own opinions; it should be nine people voicing the opinions of the nine hundred students who elected them.

ASCIT needs a strong leader to help them maintain focus and perspective during their meetings—someone to keep them efficient and responsive. The student body needs an ASCIT President who can help the BOD and the IHC work together to improve student life—someone who has the ability to illicit student opinion and represent that opinion to the administration.

David Derkits

In today's election, you will have the opportunity to vote for the next ASCIT President. I believe I can serve the student body well in this position, and I ask for your support.

As Secretary of ASCIT, I have worked closely with the President, my colleagues on the Board of Directors, the Interhouse Committee, and other undergraduates active in student life. As your representative, I have had the opportunity to discuss student concerns with many in the administration (Deans, Student Affairs, Housing, etc.) and faculty. I look forward to continuing these efforts, in a broader sense, if elected President.

I will bring other advantages of my service as Secretary to the Presidency. I am familiar with the various branches of ASCIT, from the publications to the student committees, enabling me to effectively manage the affairs of the government, direct issues to the appropriate bodies, and coordinate action. As Secretary, I have established new channels of communication, notably over the network newsgroups and through more detailed minutes; I will make use of these assets as President.

My background includes experience on faculty-student committees, including Scholarships and Financial Aid, and Academic Policies. On the latter, I was involved in the evaluation of the core curriculum. As ASCIT Election Chairman, I played a major role in the design and implementation of the new election procedures. If elected President, I will make use of the teamwork and focus which went into making the election changes. I have also been active within the House system, having served on the Page House Social Team and as Damage Rep. I will bring the same dedication, enthusiasm, and efficiency I have shown in my work in these duties, and the office of Secretary, to the office of ASCIT President.

My experience in ASCIT over the past two years has given me a sense of the strengths, weaknesses, and potential of this body. While our officers have been able to produce quality publications, social events, and other services, ASCIT has not been up to par in dealing with many issues: inadequacies in teaching, a growing bureaucracy in student affairs, disrespect for the Honor System by some faculty, and the large incoming freshman class, to name a few. In many respects, the lack of action has been a structural problem (overburdened offices, unclear jurisdiction, poor communication), and recent events have highlighted the need for improvements. Already, Steven Fought and John White, among others, have presented thoughtful ideas and valuable suggestions. The next ASCIT President must work with these students, and undergraduates in general, to find the best ways to strengthen our system of government.

If elected, I will strive to maximize our effectiveness under the current system, while we study and reach consensus on long-term solutions for implementation next year.

As your President, I will work closely with the Board of Directors, the undergraduate community, the faculty, and the administration to pursue your interests and resolve your concerns. Making structural improvements in student government a reality will be a top priority. As you vote today, I hope you consider voting for David R. Derkits as your next ASCIT President.

Brian Katon

Looking back over this term, I realize that I have spent a lot of time being critical of undergraduate student government. This is because of my overriding concern for the undergraduate community. When I first heard about this opportunity, my friends said to me, "Okay, Brian, it's time to put up or shut up." It is not my desire to be an armchair critic of ASCIT. I would rather spend my time working positively for the benefit of all students.

Faculty interaction is very important to the job of ASCIT President, and I am very qualified in this respect. Being on the House Security Committee and CO-Chairing the Common Key Committee have given me the chance to interact directly with Caltech's faculty. I will use the experience I have gained from these committees to open channels of communication between the faculty and students.

Over the past term, I have observed conflict between the IHC and the BoD. I would work to improve relations between the two bodies without compromising the goals of student government.

I personally know and converse often with students from a wide variety of backgrounds: off- and on-campus houses, different majors, etc. Although I realize that I do not currently know every student, I am very approachable and willing to listen to a diverse viewpoint before forming an opinion. This will help me to accurately represent the students to the faculty board and other members of the Caltech community.

I have experience running meetings and chairing committees. I will use this experience to generate feedback where it does not exist now. I intend to spend the time necessary to make sure that the job of ASCIT President is done properly. I already attend a vast majority of the BoD meetings. I am looking forward to getting to know more students and their feelings on the issues that come before the BoD.

As the President, it would be my duty to bring the meeting to order and direct the meeting towards an end which is favored by the student body. To this end, even if I am not elected as ASCIT President, I would be happy to learn student opinions on issues being discussed as I will still attend the meetings to voice opinions, whether my own or others. If you have any questions about this statement or ASCIT in general, feel free to contact me at x1202, MSC 680, or *bkaton@cco.caltech.edu*.

Jonathan McDunn

My main goal for ASCIT, if I am elected, is to make the BoD and its pursuits a more visible and, hopefully, a more effective part of undergraduate life. This is what I said when I ran for ASCIT President earlier this year. I still feel that this is important; however, along with this is the need for ASCIT to change. If elected, I hope to be a part of the force that changes ASCIT away from the bureaucratic organization it has become and into a body that is more open to feedback from all its members.

After all, the ASCIT BoD is not an end unto itself. Rather, it is the means by which undergraduates assert themselves as members of the Caltech community. It exists to serve the undergraduate body, not to elevate those who are elected.

Thank you.

Penny Sherman

I am running for President of ASCIT because I believe I can make a material difference for Caltech's undergraduates. The reasons that I believe I can make this difference are threefold: my approach to ASCIT, my perception of the key problems affecting undergraduates, and my prior experience on the ASCIT board.

My approach to ASCIT is that we have the organization and format for two reasons. First, and most important, is to bring forward fundamental long term issues on which the voice and vision of Caltech undergraduates should be heard. For example, the number of undergraduates is increasing, and the common belief is that the administration wants to have a numerical balance between the undergraduate and graduate students. If true, the implication for undergraduates is a course crunch (available spaces), housing (places to live), and the concern that admitted undergraduates in the future will receive a diminished quality of education. We owe ourselves and Caltech our voice on these issues. Second, is to address and provide an equality and equilibrium in the day-to-day social and political responsibilities relating to our lives at Caltech. Thus, the needed approach is to recognize and manage both sets of responsibilities and issues without compromising the vision that brought us to Caltech for short-term, immediate, or comfortable solutions.

This leads to the issue of my perception of how to handle the key problems which affect Caltech students. Many of the day-to-day problems we will face in the next nine months are largely unidentified at this time. Therefore, the key is to perceive those problems early and to develop workable solutions that will satisfy both the administration and ourselves. To do this, ASCIT needs a President who believes in the politics of inclusion. Given that Caltech students are extraordinarily intelligent and articulate, and also given that some decisions will adversely affect some group or groups of students, it is critical that the next ASCIT President be open to ideas, available to alternative arguments, and ultimately, oriented to seeking solutions that include—even if they don't completely satisfy—the spectrum of Caltech's students.

The third reason I believe that I can make a difference is my prior experience on the ASCIT board. In the three months since I have been on that board, I have focused on establishing working relationships with the administration. I have tried to understand the political decision making process in order to separate the components that Caltech students want addressed from negative emotional overtones which cloud the issues and distort the process. More importantly, I appreciate that ASCIT can be an effective voice. For example, our committee convinced the Faculty Board that it should offer introductory previews, rather than expect undergraduates to know and appreciate all of their disciplines. Knowing how to work with the administration should make the ASCIT President more effective.

In summary, the President of ASCIT can do a great deal to try to improve our student life. I hope you will vote for me so that I can try my utmost.

"I can't believe I read the *whole* thing!"

But wait! There's More! See page 3...

WHAT'S AT THE OTHER END OF YOUR MODEM?


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ESSAY by Becker Ash

Calculus Clichés

Student mathematics in desperate need of ingenuity?

SATISFIED STUDENTS burn their mathematics texts in a giant pot they created especially for this purpose. Approximately 500 copies of this $40.00 book went to feed the fires.

The freshman mathematics students of Chetlack University burned their elementary calculus books in a giant pit last month. Sources say the students were complaining that "not only was our textbook horribly confusing, it also gave us problems that had the same themes recurring over and over."

In a sense, the students were correct: modern calculus books all seem alike under scrutiny. A lot of the homework problems have recurring themes, almost everybody uses that horrible "epsilon-delta" proof that loses 80% of the students. Although calculus has developed quite a bit since the original conceptions of Newton and Lebnitz, elementary calculus books are multiplying in quantity yet not improving in originality.

It is rather interesting, in this time of educational reform and modern technology, that we cannot improve on the method by which calculus is taught. A recent discussion in the American Mathematical Monthly, for instance, talks about the method of Cathecodory's calculus, which starts from a different viewpoint that eliminates "epsilon-delta" proofs altogether. Why can't we teach our students these new methods?

Calculus was first invented to illustrate the dynamic parts of nature; let us let the education of calculus be that way too!

A POSSIBLE CULPRIT

Try your hand at the following problem below taken from the Chetlack students' textbook. See how many familiar themes you can find here.

A particle starts at rest and moves with velocity $v(t) = \int_1^t e^{-x^2} dx$ along a 10-foot ladder, which leans against a trough with a triangular cross section two feet wide and one foot high. Sand is flowing out of the trough at a constant rate of two cubic feet per hour, forming a conical pile in the middle of a sandbox which has been formed by cutting a square of side x from each corner of an 8" by 15" piece of cardboard and folding up the sides. An observer watches the particle from a lighthouse one mile off shore, peering through a window shaped like a rectangle surmounted by a semicircle.

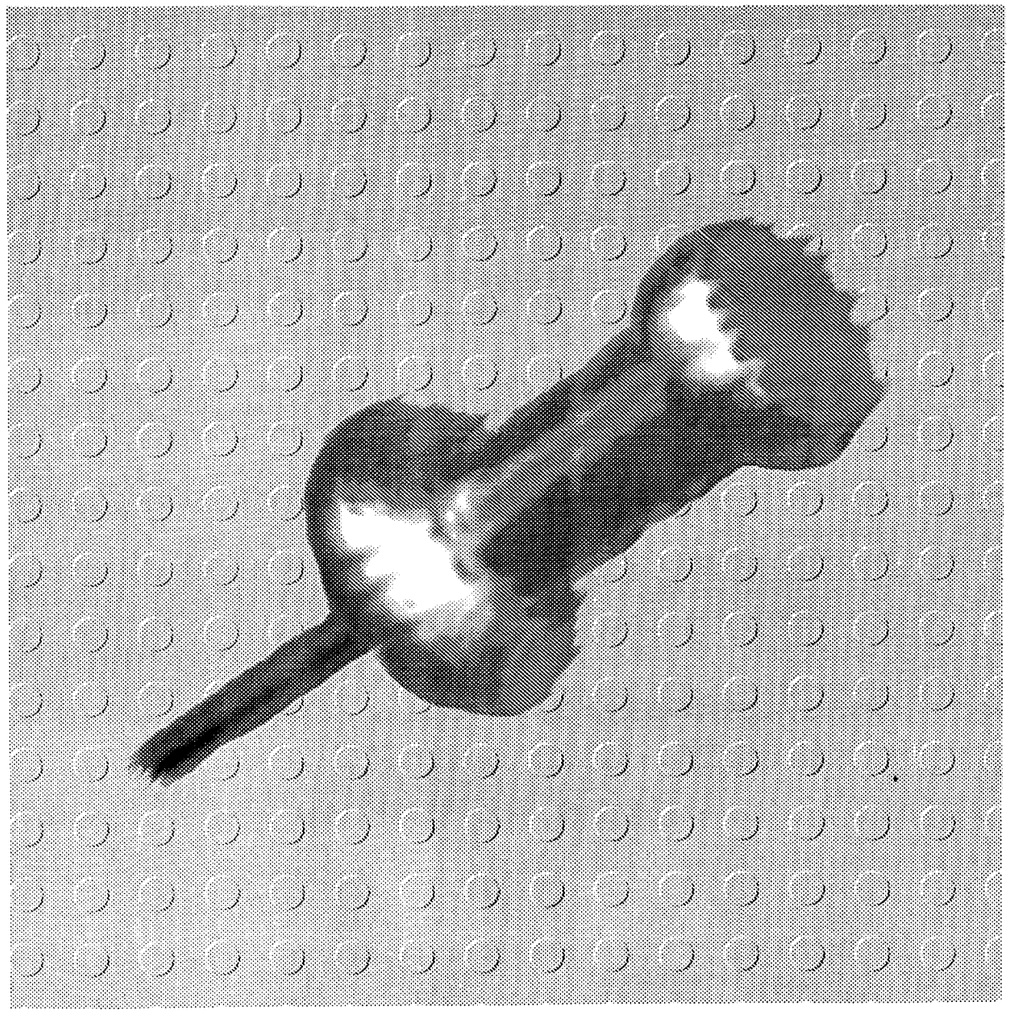
(a) How fast is the tip of the shadow moving?
(b) Find the volume of the solid generated when the trough is rotated about the y-axis.
(c) Justify your answer.
(d) Using the information found in parts (a), (b), and (c), sketch the curve on a pair of coordinate axes.

BECKER ASH is just a jerk who walked into the ***Scientific Riveting*** *offices one day and demanded to write an article. Since we forgot to commision an essay this issue, we finally relented and allowed him this horribly written piece of junk—not that there isn't any truth in it.*

SCIENTIFIC RIVETING

JUNE 1994
$6.94

The consequence of too many space stations. Modern calculus teaching at school gets criticized. Chemists actually have fun with molecules.



Hydraulic pushpins *are now the vogue in construction. Are the days of the hot throbbing rivet numbered?*

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tions to discover the color of the hat.

This in itself is rather interesting. Gerald Harriman from SUNY-Chicago has shown that for any number of logicians in a line, with black and white hats, and there is at least one set of hats in which they all know that they are not wearing, then the sequence of questions will eventually terminate with a "Yes."

The problem need not be restricted to just hats of different colors. Consider two logicians, Bush and Clinton, each with a positive integer pasted to their forehead. They also know that the two integers are consecutive. The moderation proceeds as follows:

MODERATOR: Can you deduce your number?
BUSH: No.
MODERATOR: Can you deduce your number?
CLINTON: No.
MODERATOR: Can you deduce your number?
BUSH: No.
MODERATOR: Can you deduce your number?
CLINTON: No.
MODERATOR: Can you deduce your number?
BUSH: No.
MODERATOR: Can you deduce your number?
CLINTON: Yes.

At this point the reader should know that Bush is wearing the number 6 and Clinton is wearing the number 7. The logic is too nested to go in here, but the problem is easily generalized from low numbers.

One of my friends, Barley Chopsticks, has given me a problem that involves a five-digit prime, one digit pasted on each of the logicians' heads. Unfortunately, because of copyrighting problems I can't reproduce the problem here.

However, inspired by the problem, I have created a longer extension in which the digits of a twenty-four digit prime is placed on the logicians' foreheads. The moderator asks the same questions as the previous puzzle, and the following responses are heard:

ABRAMS: No.
BUSH: No.
CLINTON: No.
DELANO: No.
EDMUND: No.
FORD: No.
GORE: No.
HARRISON: No.
IPSTEIN: No.
JEFFERSON: No.
KERREY: No.
LIVINGSTONE: No.
MARASCHINO: No.
NAPOLEON: No.
OLDSTEIN: no.
PACKWOOD: No.
QUAYLE: No.
REAGAN: No.
STEINFIELD: No.
TAMBINI: No.
UNDERWOOD: No.
VILLANI: No.
WARRENTON: No.
XYSTUS: No.
ABRAMS: No.
BUSH: No.
CLINTON: No.
DELANO: No.
EDMUND: No.
FORD: No.
GORE: No.
HARRISON: No.
IPSTEIN: No.
JEFFERSON: No.
KERREY: No.
LIVINGSTONE: No.
MARASCHINO: No.
NAPOLEON: No.
OLDSTEIN: no.
PACKWOOD: No.
QUAYLE: No.
REAGAN: No.
STEINFIELD: No.
TAMBINI: No.
UNDERWOOD: No.
VILLANI: No.
WARRENTON: No.
XYSTUS: No.
ABRAMS: No.
BUSH: No.
CLINTON: No.
DELANO: No.
EDMUND: No.
FORD: No.
GORE: No.
HARRISON: No.
IPSTEIN: No.
JEFFERSON: No.
KERREY: No.
LIVINGSTONE: No.
MARASCHINO: Yes.

Now, can you find out what twenty-four digit prime number was pasted on the heads of the logicians? A hint: it may help to write all the twenty-four digit primes.

FURTHER READING

DOES GOD PLAY CRAPS? THE MATHEMATICS OF CHAOS AND GLASSES OF WATER. Ian McMalcolm. Basil Blackink, 1990.

GIRDLES, ITCHES, BRAS: ETERNAL GOLDEN BRAIDS. Dugout Steader. H. W. Freepeople & Co., 1985.

THE LOGICAL UNIVERSE. Stick Badman, Stove Furnace, Nick O. Pete, and ten apostles. Permanent Press, 1987.

LOSING LAYS FOR YOUR MATHEMATICAL GRAYS: VOLUME 1. Berkley Amp, What A. Guy, and Jane Gordon Hathaway. Macademia Press, 1830.

Hats and Perfect Logicians

A very old problem is the one about three perfect logicans who each undergo a test. Each one is given a hat that is either white or black from a pool of two white hats and three black hats.

The three logicians are placed in a room and positioned so that each can see the hats of the other two. They are then told to raise their hand when they can deduce the color of their own hat. Invariably, one logician with a black hat will raise his hand.

The most common case given is that when all of them are wearing black hats. The reasoning of the logician is stated thusly: "Suppose my hat is white. Then the logician next to me sees one black and one white hat. She knows that if the third logican had seen two white hats, he would immediately raise his hand. Since the third logician did not immediately raise his hand, she would conclude that he could not be seeing two white hats; ergo, her hat is black. However, since she has not undergone this reasoning because I know she thinks faster than this, she must be seeing a black hat on my head. So my hat is black."

This logic, unfortunately, is problematic. It assumes knowledge of how fast the logicians reason, and the generalization to more people is dangerous. To stop this problem, it is usually formatted by a moderator who asks the logicians in turn, "Can you deduce the color of your hat from the other hats you see and previous answers to this question?" The logicians answer yes or no, and the pool of information is well defined until one logician answers yes and ends the game.

In fact, it turns out that in this format the logicians do not have to all see each other. The three logicians (let us call them Abrams, Bush, and Clinton) go through the same conditions, but they are now positioned in a row so that Abrams can see both Bush and Clinton, Bush can only see Clinton, and Clinton can see no one. The moderator then asks them the question in alphabetical order. Even though Clinton is effectively blind, he will know the color of his hat if the moderator ever gets to him! The reader can work out that the first person to answer always turns out to be the first one to be wearing a black hat and sees no black hat in front of him.

Of course, all this is dependent on the restriction that the pool is from two white hats and three black hats. In effect, this is the same as telling the logicians that they are not all wearing white hats; any other combination is possible. Yet after enough questions some logician will have whittled away enough combina-

ABRAMS BUSH CLINTON

ABRAMS, BUSH, AND CLINTON look forward, only knowing that they are not all wearing white hats. Although Clinton could deduce his color immediately if he were allowed to look at the others' hats, he needs more information without peeking.

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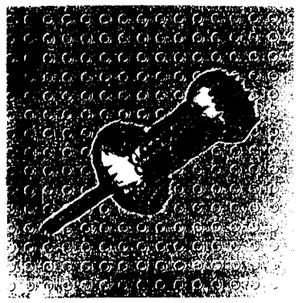
DEPARTMENTS



THE COVER is an artists' rendition of substituting pushpins in place of rivets in construction. Actually, the entire article is a joke and doesn't even appear here. Fortunately, you probably got most of the fake articles anyway, so we don't feel too ashamed by not referring you an article later on. Boy! Paroding 120 pages in 16 is hard work!

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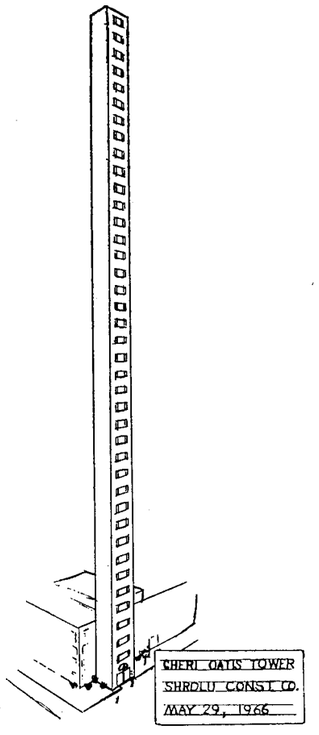
28 AND 42 YEARS AGO

VOLUME LXVII, NUMBER 69

"The Student-Faculty Committee on Undergraduate Curriculum announced today the addition of a new frosh course for next year. The new course, Home Economics and Marriage Engineering, will be a six-unit course (1-4-1) to be held first and second term. The motivation behind this new course was an unexpected grant of $1 million from the National Association for the Advancement of Women (NAAW). This grant was totally unexpected as it was originally intended for Scripps in Claremont, but, due to a mix-up in zip code numbers, came here instead."



Artists conception of Cheri's Tower.

the Hot Rivet

Volume LIII Caligari Institute of Necrology Tuesday of Finals Week Number 30!!!

"It has just been release that the Oatis Elevator company has designated Caltech as the site of their new laboratory. The structure, to be named Cheri Oatis Tower in honor of the wife of the president of Oatis elevator company, will be a forty-story addition to Guggenheim. The tower, to be the tallest structure on campus, will consist of primarily a 100 square foot elevator shaft to be used to test radical and experimental elevator designs. At other times, this new lab will be used for short-duration free-fall experiments."

VOLUME LIII, NUMBER 30

"The center of the earth is made up of highly compressed whisky bottles. This is one of the principal parts of a new theory of the origin of the earth made public here recently. According to Harris and Drown, originally, there was a vast cloud of alcoholic fumes and containers around the sun. (They have not bothered to explain the origin of these alcoholic phenomena, saying that matters should be left to the metaphysicists and the members of CTC who are best able to deal with such problems in a disinterested manner.) The view that major factor in the genesis of the earth is condensed beer foam, Drown does not entirely agree, feeling that Vodka may have been more important. In any case, both agree that the origin of the earth was a condensation of alcoholic matter. The whiskey bottles, being the most dense, form the nuclei of condensation, and thus, the center of the earth."

"About twenty Tech men descended on Baby Bunting Hospital tonight in an efficient, well organized nylon panty raid of the student nurses, absconding with about three dozen multicolored samples through the din of delighted shrieks. Rather than being instigated by spring fever, the affair was motivated by the scientific interest of the CHIT 1122 class, Analytic Alchemy, driven by Dr. Gears Must Shift. The alleged purpose of the raid was to obtain nylon panties to see if Blacker men have been lying on purity tests."

"Notorious Caltech, alleged pink bed of McCarthyism, is still being sued after a year-long battle along with 14,000 peasants and 700 grammar school kids who are all accused of stealing from Uncle Gullible Schmoo. The Fullbull case, No, 606, instigated by the late J. Hot Macath and his secret police, was designed to remove the last traces of state subversion against the people's administration. When last seen, J. hot was happily fleeing corruption-ridden Washington after incurring the severe displeasure of His Majesty Truman."

the American agricultural system.

There is hope for the future of the tomato, however. For the past several years, while we in the United States have been trying to deal with this tomato dilemma, many other nations have been using a genetically engineered breed of tomatoes which have the characteristics of infinite shelf life, improved color, and enhanced structural stability. In a recent F.D.A. press conference, an announcement was made that the engineered tomatoes are suitable for marketing and consumption in America as well.

Food distributors and supermarkets across the nation have been eagerly anticipating this bold new move for months. The features of these new tomatoes mean good news for grocers since there is no longer any need to get rid of excess inventory. A firm in Atlanta has also made an offer to repair any damaged tomatoes for the distributors, further enhancing the marketability of this product.

For farmers, however, the news comes as somewhat of a financial blow to the head. Since many farmers have relied upon the waste of consumers and distributors for years, they have been doing very well as of late. But now that waste of the tomato crop will be eliminated or at least greatly reduced, many farmers will be forced to find other crops to plant.

Besides being marketable theoretically forever, these new tomatoes are ideal for the supermarket setting in their ability to resist any normal form of consumer testing such as thumping or squeezing. Spills of tomato displays should not hinder quality either, as they are nearly impervious to structural damage. Consumers of this product in other nations are largely pleased with the improved flavor and shininess; reports have even been received describing improved agility and enhanced night vision. Preliminary results in the United States are favorable. *—Anira Kegi*

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Are Anti-Matter Bombs for Real?

It would seem that the nuclear arms race is over. Five years ago, we were armed to the teeth and ready to incinerate the surface of our enemy, and the Earth, at the push of a button. Now, with the fall of the Berlin Wall and the Iron Curtain behind us, our huge nuclear arsenal is undergoing a massive move from the silos to the trash heaps.

Now, disposing of a nuclear warhead is no easy task. As a matter of fact, an entire industry has been created to handle the demolishing of these huge weapons; it is an industry that employs hundreds of skilled scientists and technicians, not to mention the countless laborers who put their lives at risk to dispose of the warheads.

Into this rapidly changing field of large scale weapons management has jumped a new factor. Scientists across the nation have recently developed new technologies which allow for missile-propelled weaponry on a scale never before dreamt of. Although it has been little more than an idea for decades, the anti-matter warhead has suddenly become a reality. This new warhead, when constructed properly, would allow for the incineration of an area approximately three hundred miles in radius.

Needless to say, a slight conflict of interest has arisen over the use of this technology. While the scientists and laborers feel this would be beneficial both for the scientific world and for the general defense of the nation and its defense industry, the government feels somewhat differently due to the existing agreements and treaties to eliminate tactical warheads of this type.

After weeks of legislative decision making and bargaining on the topic, an agreement has finally been reached which should prove extremely beneficial to both interests. The defense industry can be appeased, perhaps even enhanced, by being allowed to mass-produce warheads. However, due to the enforced laws, as soon as these warheads are produced, they must be immediately destroyed. Analysts predict dramatic increases in the activities of both industries, which would open up new jobs across the nation. With the compromise set and both interests appeased, it would appear that the defense industry in America is "booming."

—Realcun Deahraw

LETTERS TO THE EDITORS

Obscenities? Us?

I'm writing this letter to tell you that your excessive use of obscenities like "s—," "b—s—," and especially the word "macroscopic." In fact, in one of your issues I saw the word "macroscopic" used no less than eighteen times! There is no excuse for using such dirty words like this where clean, everyday phrases are available like "f—ing big." Please cancel my subscription immediately.

STUART FANUCKER
Wantmore, Pa.

Note: the previous letter has been edited for profanities (at least the words that we think are profanities. —eds.

Captions Commended

I'd like to congratulate all of you for actually daring to move the photo captions on a different page than the ones the pictures are actually on. This makes it much more convincing that you are actually more like a well-written book, even though you probably still report the same old ramblings that you are famous for. Anyway, this is one step on the road of improvement! Thank you!

MICHAEL ANTONIO DOMINIO
Florence, Italy

More on Stapler Removers

About Stephen Keeler's article on stapler removers [SCIENTIFIC RIVETING, January 1993] there are a few corrections and comments I would like to make:

(1) I don't think that the stapler remover was invented in Kentucky, as you say. Sure, the *modern* stapler was invented in Kentucky, but it was only a minor difference when they added the thumb holders on *both sides* of the remover instead of only one, enabling the stapler remover to be ambidextrous. The stapler remover was around for at least six months before that, and was invented by Glen Cooke from Hardsville, Tennessee.

(2) Mary Holliday does not have the gilded Nantucket memorial stapler remover of 1948. I own that particular remover and had it on loan to Ms. Holliday, presumably at the time you interviewed her. I will accept your apology in this matter.

(3) Does the author, Stephen Keeler, actually belive that people would *ergonomically* design stapler removers? The measure of energy is only a small amount when the stapler remover is concerned. Perhaps he meant 'tribological'?

Aside from these points, I found the article quite entertaining and enjoyed it wholeheartedly. I hope you will do many more articles on stapler removers in the near future.

MELISSA MINES
Department of Staples and Other Metallic Stationery Goods;
School of Writing, University of California, Las Vegas

Huh?

You guys at Scientific Riveting are just too gyerksnay to even think that ikfmsbnj would decide to jumikarp of their own accord. I think you are all just inconsiderate little wunkels who deserve a good and hard tsdbk under your shoulder.

ZOPHAD BEEXLEBROB
No Address

Fermat's First Rivet

Regarding your review of the recent proof of Fermat's Last Theorem as it relates to riveting [SCIENTIFIC RIVETING, June 1990], I must say that it did not tell the whole story. I myself am a homosexual Communist who has used exactly 49 rivets directly in my lifetime, but I do not think that the proof of Fermat's Last Theorem is extremely relevant to my life. I would at most call it very relevant. Nevertheless, the article was interesting and pointed out to me relations between Riemann sums and those "Do Not Remove" tags on green pillows that I had never really noticed before. Thank you.

ANDREW "TWISTY" GARFUNKEL
Columbus, Oh.

This Was the Year That Was — Or Was It?

You know, along with your articles on flying domesticated snakes [SCIENTIFIC RIVETING, January 1993], endorphins that take on the characteristics of mushrooms [SCIENTIFIC RIVETING, March 1993], and Madonna's third canister of lipstick [SCIENTIFIC RIVETING, August 1993], I can only say: keep it up!

BARNOLD ECKMAN

The Brief History of the Minovsky Particle

Quantum physics makes a practical comeback after discovery of another fundamental particle

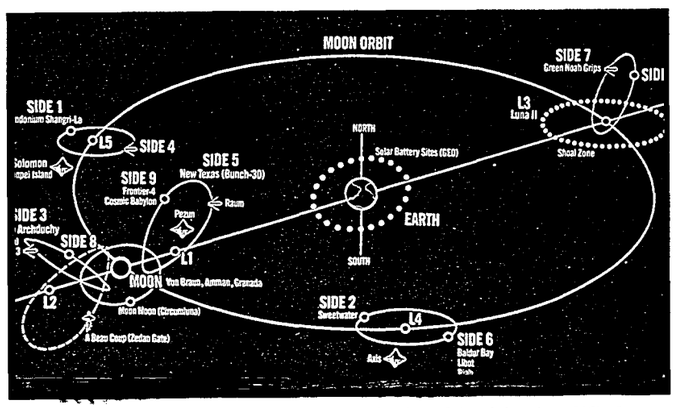
by James Rhodes

In Universal Century 0065, Professor Yuri Tereshkovich Minovsky proposed a new type of physics based on a class of subatomic particles that absorbed electromagnetic radiation in the longer wavelengths. The existence of these particles was confirmed in Universal Century 0069. From that point on, they were called 'Minovsky Particles'. They were shown to block all radio, radar, and infra-red wavelengths, but not visible light and thus lasers. The end result of Minovsky's research was a device that can generate and broadcast a particle cloud that neutralized radar and reduced the effective range of any weapon to line-of-sight. Long range electronic warfare became a thing of the past. This "Minovsky Effect" turned the clock back to make so called "dog fighting" combat techniques practical again. Where in olden times airborne and armored fighters tried to keep the enemy at a distance and gain advantage of range, the warriors of the modern world work to take the battle to the foe and make use of the advantages of individual skill, mobility, size and weaponry. Single combat between two opponents is as much a factor as overall strategy and tactics in determining the outcome of a battle. Battlefield communication is also limited to localized signaling, leaving the combatants on their own, isolated from any distant command or support.

In addition to this, the Minovsky Effect made the MagnetoHydroDynamic, or MHD, fusion generator a reality. The same field which neutralizes radio and radar provides a radiation screen and containment field for thermonuclear fusion. The Minovsky Fusion Power Plant was about 1m × 1m × 2m, but generates all the electrical needs to illuminate all but the largest of modern cities.

As time went on, more aspects of the Minovsky particle were discovered, such that gravity can be affected by the particle, resulting in Minovsky craft that fly by levitation, and fields that can repel projectiles thrown at them. Minovsky craft are then inherently stealth craft, detectable only by human sight (and NewType talent, of course).

One of the first practical uses of the Minovsky particle was in the design of Mobile Space Instruments, and of course the military Tactical model, the Mobile S.U.I.T., originally used to aid in the building of the space colonies which , being 63 kilometers long and 6.3 kilometers in diameter, and holding an average of 36 million people each, hold most human life in the Earth/Moon system. Though it is commonly known that they have been in existence for a long time, it is not commonly known that they were originally conceived by Gerard K. O'Neil, a NASA design personnel at old Princeton, in year 1978 of the old earth calendar, basing on work of Henry Gray's patented work(US patent 3,749,332 dated 31 July 1973, again by old earth calendar), in turn based on papers dating as far back as Edward Everett Hale's paper in *Atlantic Monthly*, Volume 24, of October 1869. Some of the included diagrams show a colony, the present day map of the Earth/Moon sys-



THE LOCAL REGION OF EARTH is depicted in this simplified map. Up-to-date records are hard to come by; this is from U.C.0123.

Simple Failure?

Supercollider industry suffers major setback

The scene was sheer jubilance last Tuesday as the group of designers, developers, mathematicians, and physicists gathered in eager anticipation to witness the first trial of the newly completed superconducting supercollider based in western Algeria. Unfortunately, the trial did not proceed quite as expected.

After a long process of deceit, bargaining and intense debate, Nigeria was selected as the site of this engineering marvel mainly due to the lack of wide open space in any other nation. The United States was the primary candidate for the location of this behemoth structure, but reports of possible intervention by the U.S. government scared the decision committee away. Upon completion, the collider, which measures over 1,350 miles in circumference and rising an amazing 150 feet off the desert floor, broke records for physical size and support requirements across the globe and is expected to raise the national tourist income in Algeria by over eighty percent this year alone.

Weather satellites scanning the area soon after completion of the collider were able to detect its image and transmit it back to scientists around the world. Not only is this new collider the only object on the continent of Africa visible from high orbit, but its economic, social, political, and climactic changes are already being felt in nations on the other side of the Earth. Huge low pressure systems created by the airflow inside the collider have sparked tornadoes and thunderstorms across Africa while causing relative draught in adjacent nations.

Despite the thousands of lives lost during the construction of the collider and the trillions of dollars spent to dig the foundation alone, it all came down to one decisive moment on Tuesday. After the twenty-four hour warm-up period during which the particles inside the collider were accelerated to nearly the speed of light, professor Paul Endelkrich of the Oxford University Centre for Advanced Studies pressed the single red button on the flashing control panel to align the electrons and induce the highest energy electron-positron collision ever generated by mankind. The professor spoke in anticipation of the collision:

"I am left somewhat speechless by the implications of [Tuesday's] test. If all goes well, we will be able to prove Einstein's Theory of Relativity beyond any shadow of a doubt. To know that I will have the opportunity to fire the particles is an honor beyond belief, one I cannot describe accurately enough."

When the button was finally pressed at 12:08:33 p.m. EST on Tuesday, the electron and positron came into alignment, and data on the collision began pouring into the massive computer banks set aside for just that task. Early impressions of the experiment were favorable.

It was not until late Wednesday that scientists were actually able to determine the value of their results, and they were not pleasing. After hours of repeated analysis by a network of physicists across the world and error checking by some of the greatest mathematical minds ever produced, it was finally determined that the experiment had no scientific value whatsoever.

"It is a grave moment indeed," said Endelkrich after the verdict was given. "It is a grave moment; but the physicists of the world have only found new inspiration. We now have a new purpose: we must create an even bigger accelerator; the mere fact that the electrons were not moving fast enough does not disprove Einstein's theory. This setback has done little more than place an even larger goal on the horizon."

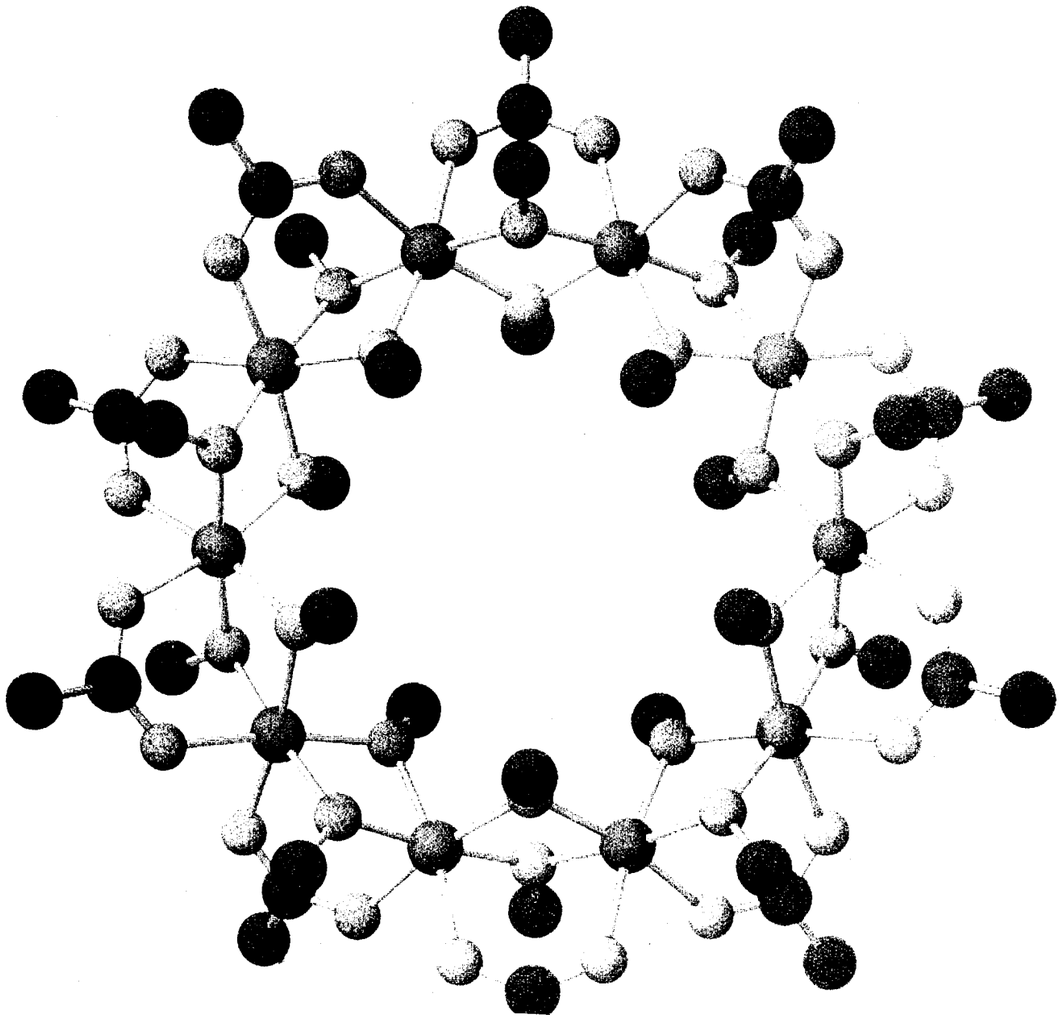
According to Institute physicists and engineers, plans for an accelerator nearly three times as large as the current one are already being developed. Location of the new project is still undetermined; preparation may involve clear-cutting a large region of the Brazilian rain forest to make room for the huge structure. Its construction would be yet another engineering feat on a scale never before dreamt of; but despite over thirty failures over the past several decades similar to the one reproduced last Tuesday, the physicists are determined to find a solution to this puzzle once and for all.

—Solomon Paine

Tomatoes are Forever

New breed of tomatoes takes the world by storm

Tomatoes have been a central part of the American diet for years. The very French fries we pride ourselves in could not be the same without a serving of ketchup on the side. Stuffed tomatoes, salad toppings, and spaghetti sauce all owe their existence to this fruit. However, the limited freshness and ripeness period of tomatoes has taken away considerably from their value, and has imposed heavy burdens on



THE FERROUS WHEEL $[Fe(OCH_3)(O_2CCH_2Cl)]_{10}$ is just another molecule created by chemists for amusement. It also cost each taxpayer approximately $1000 to make. So what? It looks cool.

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tem adjusted, and a handful of Mobile S.U.I.T.s.

Now, all these have resulted from early implementations of Minovsky particles:Mobile S.U.I.T.s, and the related weaponry, including the model General Utility Non-Discontinuity Augmented Maneuvering system, popularized as the G.U.N.D.A.M., quicker development of the Lagrangean space colonies, and of course all of the Psychommu systems for NewTypes(as most of them are used in the military GUNDAM prototypes).

However, I have proposed a new method of using these , in combination with the Psychommu systems utilized in the NewType Mobile S.U.I.T.s to form a shell capable of created a way of using NewType energy as a radiation so to create Biomechanical devices powered by the life energies of the wielder. As the studies of the so-called "Cosmic T" by the Lady Chein of Anaheim Electronics (before her tragic death last year in the Final Battle of A.X.I.S., also called "Char's Counterattack" by some Spacenoids) have shown, massive outputs of NewType energy can cause emissions of other radiation. However, this process is highly random and inefficent, and even more uncontrollable than the NewTypes that generate it. I recommend that by placing a toroid of a Psychommu crystal lattice, the energy shall be focused along its lattice. Although focused, studies done by this researcher at the Murasame Institute for NewType Studies have shown that a full 10% of the energy is lost to radiant energy. In the case of higher NewType emissions (as generated when the NewType Camille Vidan refused to be a test subject), the inefficiency increased steadily to 90%, at which point the lattice was disrupted. After the shell of a Minovsky particle lattice mixed with a Psychommu lattice about the main Psychommu lattice structure was proposed, many shell mechanisms were tested, ranging from a second toroidal shell through many others in a computer simulation. Eventually, a highly efficient shell was composed of a sphere surrounding the toroidal center. Unfortunately, if dealing with radioactive measures in Biomechanical measures, and perhaps nanotechnical measures in the near future, any degree of inefficiency is dangerous (although only four Murasame NewTypes died as a result of the testing. At this point, Professor Shizuma and his design team got involved in the project, including the brilliant and esteemed Professor Franken von Fogler. Shizuma's design team worked on the secondary shell and thus added the Shizuma Drive Shell to the device. They have found that the system after this secondary shell, can work to the point of total efficiency.

The amount of energy produced by such a device is related to both the life energy of the surrounding peoples(notably higher in the presence of NewTypes, with an average increase of 10000X-ranging from a low of 100X to no noted maximum level) as well as the size of the device. A hand sized model, in the presence of an normal person, can generate the same energy of a Minovsky engine. One of a millimeter in length, also with a normal person, can generate enough energy to power a Haro device indefinitely, making Nanotech devices possible, at least in theory.(No such device smaller in length than 4 cm has been made successfully).

Those desiring to repeat or examine the trial data of these tests mentioned in this media are to note that the data on these and other related tests are available via anonymous ftp at 131.215.6.17

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PROFILE: MICHAEL GRAFT

The Mastermind behind Administratium

Michael Graft, widely credited with making important discoveries leading to the discovery of Administratium, the element whose nuclei consist entirely of a neutron, deputy neutrons, associate neutrons, and deputy associate neutrons, is at it again. He recent theoretical work has been strung together to form yet another theory to explain where the "missing matter" in the universe is: all the socks that have ever disappeared into dryers are sucked into a new dimension known as hidingspace. Objects in hidingspace are as fully irrecoverable as those in black holes, with the sole exception that if a the match to a sock residing in hidingspace is ever thrown away, there is a 25% chance it will reappear in the next five years. (This figure includes the 2% chance that one of your in-laws will find in the most obscure place in the house on their next visit.)

His scientific achievements aside, Dr. Graft is a very busy man. He is a professor of philosophy at the United States Footware Academy, where he teaches future generations of our country's top shoe-salesmen the arcane laws of the universe needed to understand how the most successful methods to suspend the actions of a persons brain for just long enough to get them to buy a $30.45 pair of sneakers built to last just long enough for the Illuminati to create a new fad in footware. (*Disclaimer: the Illuminati do not exist, are not evil, and do not control the world. Any reference to them is false and has no meaning.*)

When asked about his hobbies, Dr. Graft replied, "I have no hobbies, except for carefully matching my socks each day. After all I've learned about Theoretical Astrophysocks, it would be a shame not to apply it to my life." He says he is also building machinery utilizing the element Administratium to replace most of the U.S. Government, but "they are paying me for that. This is a machine worth trillions, and I bid ten times what it was worth to build it for them. They took the bid, since there was no other bidder. Having a monopoly on the supply of purified Administratium helps of course." A high government official, speaking on the condition of anonymity, would only say that Administratium is hard to isolate and work with due to it's property of emitting paperwork and increasing in mass after this emission. He also said that the government expects to be able to waste tax money much more efficiently with the new machine.

Michael Graft is 6'1", has long, thick, grey hair, and weighs 173.14 pounds. His age is 52 years. He smiles most of the time and his favorite color is green. He likes to eat oranges, tangerines, tangelos, and other citrus fruit, but hates lemonade. "It just doesn't taste all that good, that's all," he has been alleged to say frequently. He is under investigation by the FBI for possibly violating the civil rights of citrus fruit. (Discrimination on the basis of skin color of citrus fruit.)

Dr. Graft has never been married, divorced, separated, in the hospital, or even born. It is believed by some that he is a fabrication by this journal.

—*Su Do Nym*

the HairCutters

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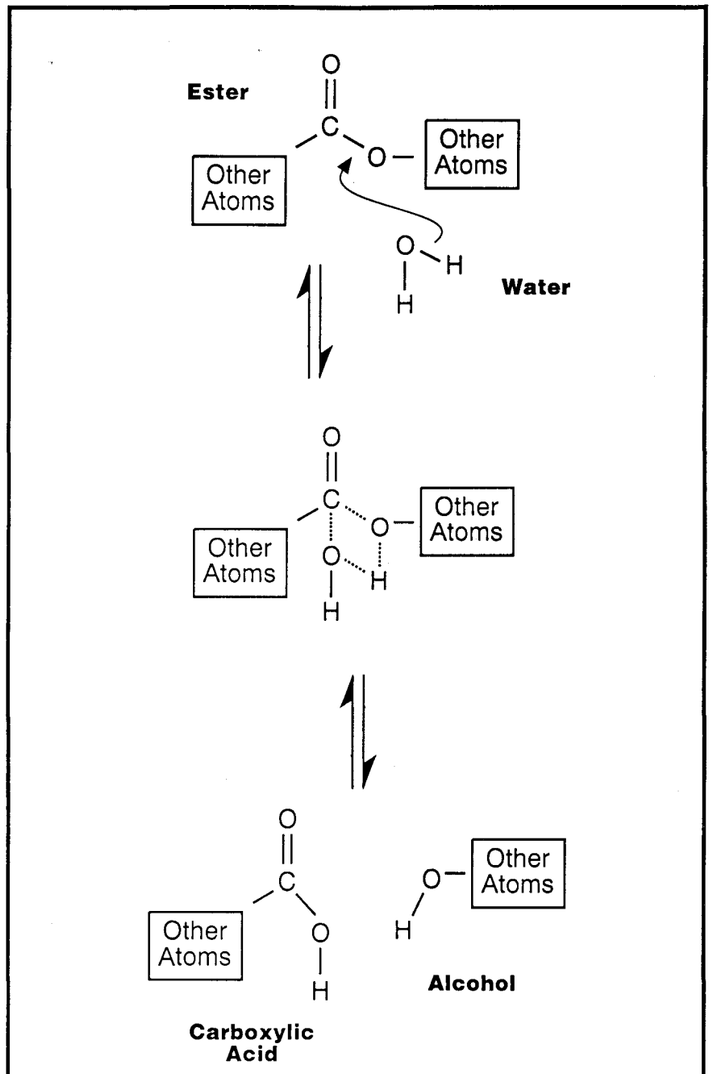

A TYPICAL EXAMPLE of how an ester might disassociate in water into a carboxylic acid and an alcohol. The recently discovered Williams ester, however, has its "other atoms" constucted to absorb any water, making the water unable to disassociate the ester.

by Peter O. Bishop

My first chemistry teacher was a stand-up comedian. I think his favorite joke was somthing on the lines of:

HYDROGEN ATOM 1: I think I just lost an electron!
HYDROGEN ATOM 2: Really? Are you positive?

Of course, he just used these jokes to help us remember the material better, to have something to hang on to when memorizing long lists of nomenclature. No one would really think that any of the stuff he came up was actually true.

Or was it?

Take, for instance, the following facts recently discovered:

Look at chemical symbol for plutonium. Pu. Not Pl, but Pu. My teacher said it was because the inventors thought their plutonium smelled, so they called it Pu. (In case you've forgotten, platinum isn't Pl either. It's Pt.) We all thought that was funny, but probably not true. Well, it is.

Another recent discovery was that of the Williams ester, the only ester that was really hydrophilic, could absorb lots of water without being disassociated.

What do you call one of the reactants in a Michaels reaction? A Michael ketone. Think I'm making this up?

What do chemists make in their labs for amusements?

A ferrous wheel. Se the picture on the next page. They've made it. Really.

Senior Class President

June Fujimoto

Graduation is only a year away for us soon-to-be-seniors, and there is still a lot of planning and work involved concerning the Senior Banquet, the selection of the graduation speaker, the Senior Gift, and Ditch Day before we get our diplomas. I would like to take on all of the above tasks as your Senior Class President. I'm very proud to be a part of the class of 1995 and would like the chance to contribute to it.

I've been involved in ASCIT, the Freshman Admissions Committee, and in my house government, and I have entered each position with a great deal of energy and spirit. Additionally, I was responsible for the reappearance of the Women's Softball Class/Club. I got students excited about the club and was able to form a team that still had fourteen committed players at the end of this term. As your Senior Class President, I can assure you that I will bring to the job that same enthusiasm, responsibility, commitment and leadership. I will make the student voice be heard on the Convocations Committee and anything else related to student interests. I hope to help select a graduation speaker we can all respect and one who can inspire us to a higher level. I truly am excited and ready to serve as your Senior Class President. I need your vote in order to do so.

Gisela R-Sandoval

Hello! I'm Gisela R-Sandoval and I'm running for Senior Class President. Last year, when I was Upperclass Director-at-Large, the part I enjoyed the most was interacting with and meeting different people every time someone borrowed the van. It was great fun to be woken up during every plague of the LA area by aspiring disaster journalists. I think that Senior Class President will be a lot of fun for I won't just have to determine a day for Ditch Day but also go around talking to lots of people making sure all the Seniors know about Ditch Day and everybody else is confused. Other duties of the office involve planning commencement. I will get things done responsibly. Doing seating arrangements for the Graduation Dinner at the Ath sounds like fun, and I will make sure everybody is where they want to be. I will welcome any ideas about Ditch Day or Commencement. I also plan to solicit seniors' opinions before making any final decisions. I will bring much enthusiasm and care to the office. After all, we are *finally* graduating, and I want the last few weeks at Tech to be great for everyone!

Richard Zitola

Since I've been fairly active in various student activities in the five years that I've been here, many of you have at least heard my name. In the past, I have held such offices as Dabney House Librarian, *Little t* editor, SEDS Secretary, and Student Shop Foreman. In each of these cases I believe I have successfully performed the duties of the office. In this coming year, I would like to serve as Senior Class President. I have spoken to the current President, Joan-Marie Gimbel, and I understand what the responsibilities of the office of President are. These include some secretarial duties such as sending invitations to parents of graduating seniors and arranging the seating plan at the graduation ceremony. Also, the President selects and makes the necessary arrangements for the Senior Gift. Finally, the President selects the date for Ditch Day, which I promise will be tomorrow, really.

Senior Class Secretary/Treasurer

Kristin Polito

I would like to make the graduation of 1995 *our* graduation. The Senior Class President and I, as the Senior Class Secretary/Treasurer, will serve as liaisons between the Senior Class and the Convocation Committee. As such, I would like to set up an e-mail account to accept comments, concerns, and suggestions from seniors concerning graduation which could then be communicated to the Committee. I feel this kind of information from the Senior Class is important as I have heard several concerns about graduation ranging from the use of orange and white confetti to the discomfort of the graduates who must sit in the sun wearing black robes. With more communication, such concerns can be addressed. As Secretary/Treasurer, I would also post concerns and the status of the Committee throughout the year to keep the Seniors updated on graduation.

Obviously, one of the biggest concerns about graduation centers on the speaker. As a liaison between the Committee and the Seniors, I will work to insure a satisfactory speaker is chosen using the information gathered by the Junior Class President. Dissatisfaction concerning the speaker for the 1994 graduation has been voiced; I will work to prevent a similar situation in 1995. I would like to see the administration work with the students to choose a speaker.

In addition to serving as a liaison, I, as the Secretary/Treasurer, would assist in planning the post-graduation reception and in setting the date for Senior Ditch Day. Again, I would like to hear opinions from the Senior Class concerning these issues.

Overall, I want our senior year and graduation to be a positive and memorable experience. As Senior Class Secretary/Treasurer I can make this a reality.

Bert Sommar

Hello fellow members of the Senior Class of 1995. You all know me—we have spent the last three years together in anticipation of the day about a year from now when we'll graduate from this place. Now though, it is time to elect representatives from our class to smooth over our senior year and the process of finding a graduation speaker. This is where I would like to help. I have some ideas for possible speakers, and I am very interested in getting a non-traditional speaker to make the occasion a bit more memorable. Please do me the honor of voting for me for Senior Class Secretary/Treasurer, and I will do you the honor of serving to the best of my abilities.

Junior Class President

Nestor Ocampo

A quick look at the responsibilities given to the Junior Class President doesn't turn up very much. The president is responsible for organizing Mudeo and finding a Commencement speaker. While this certainly sounds like an easy job, the consequences of taking it lightly are quite evident. Mudeo, the Freshman-Sophomore event sponsored by the Junior class, draws Freshmen and Sophomores in dwindling numbers. Commencement, which serves as a milestone for our academic careers, cannot feature a stimulating speaker from outside the Caltech community without the ambitious efforts of the Junior class officers and the Commencement committee.

If elected Junior Class President, I would take the responsibilities given to me very seriously. Like many other undergraduates, I would like Mudeo to be an event that involves a greater percentage of the student body. More importantly, I would like Commencement in 1996 to be a memorable event featuring a prominent speaker who relates to the students of Caltech.

First of all, I would like to change Mudeo from its present form for the benefit of the participating classes. I actually like mud, so I'm not in favor of eliminating this Caltech tradition, but I think addition of some Caltech ingenuity to the event will encourage more people to participate. New events and better publicity will be necessary to make this happen. While I admit that I am not entirely sure what new events we could bring to Mudeo, I am open to suggestions that will en-

SEE JUNIOR , PAGE 4

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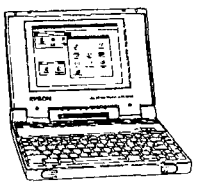

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Events and Notices

Notices

1994-95 H&SS Course Schedules—Preliminary schedules of courses to be taught in the Humanities and Social Sciences during the 1994-95 academic year are available in 228 Baxter.

Students traveling in Europe this summer can pick up a copy of "Europe Through the Back Door" from Lauren Stolper in the Fellowship Office in Lloyd House. The June-October edition contains an interesting article on women traveling alone, information on Eurail passes and lots of helpful travel tips and resources. Copies are limited to those on hand so stop by soon. Call x2150 and spell your name and give your box number of mail code to have a copy sent via campus mail.

Attention Campus Employers! Do you have a job that a Caltech student could do for the summer—office work, lab work, any odd jobs? You can advertise them in the Career Development Center. Please call x6361 or visit us in Room 08 Parsons-Gates.

✻**International Orientation Planning Meeting**—International Student Programs invites all students interested in helping with the Fall '94 International Orientation Week to a Planning Meeting on June 15, 1994, from 4:00 p.m. to 8:00 p.m. at Winnett Lounge. If you would like to assist in organizing various activities for new international students please join us for discussion and dinner. To confirm your attendance please call ISP at x6330.

Club Announcements

Caltech SEDS meets every Sunday evening at 9 p.m. in 107 Downs to discuss and plan for its $4 million satellite proposal. Help is needed from undergraduate and graduate students, and advising is needed from research fellows, faculty and staff. Experience with space hardware of with specific experimental subsystems (gamma-ray astrophysics and atmospheric chemistry) is not necessary. All members of the Caltech/JPL community are welcome. Contact Ben McCall at x2902 or *bjmccall@cco.*

Fellowships and Scholarships

The Kirby Company is continuing its annual college scholarship program, "Makin' the Grade." Scholarships range from $250 to $1000. Participants work as full-time and part-time independent Kirby dealers during June, July, and August, competing for monthly scholarships based on sales performance. For more information, contact your local Kirby distributor, call (216) 228-2400, or write The Kirby Company, 1920 West 114th St., Cleveland, OH 44102-2391.

Marshall Scholarships allow students who have U.S. citizenship and an A- GPA (not counting freshman year) to study at any university in Great Britain for two years. The Marshall is one of the most distinguished fellowships and is sponsored by the British government to commemorate the humane ideals of the Marshall Plan. Applicants should be graduating seniors (that's you current juniors!) or graduate students who will be twenty-five or under as of Oct. 1, 1994. Applicants may study in any discipline at the undergraduate or graduate level. Last year over 800 applicants nationally competed for forty awards. If you signed up on the summer fellowship mailing list for the Marshall you will receive an application shortly. If not, call Lauren Stolper at ext. 2150 or e-mail *Lauren_Stolper@starbase1.caltech.edu* to request an application. Married students may apply and generous spousal support is available. The awards for single students are valued at over $40,000 for two years of study.

Fulbright Grants for Graduate Study or Research Abroad provide funds for graduating seniors, grad students, or post-docs to study or do research in over 90 countries throughout the world. Grants are for one year and fund travel, tuition/fees, and a living allowance. This is a great opportunity for graduating seniors to go abroad and for grad students who want to study or do a post-doc outside of the U.S. U.S. citizens may obtain information and an application from Lauren Stolper, x2150. International students can contact Lauren Stolper to determine if their country participates in the Fulbright program. Those who signed up to receive Fulbright information on the Fellowship Summer Mailing List will receive information shortly.

Summer Work Study—Information and applications for 1994 Summer Work-Study are available in the Financial Aid Office. If you are interested in Summer Work-Study, please submit the required application as soon as possible, but no later than June 1, 1994. Your entire financial aid application must be complete by June 1 to be considered. If awarded, the work-study funding will begin with the July 4th payroll period.

The Financial Aid Office has applications and/or information on the following and additional scholarships. All qualified students are encouraged to apply. Our office is located at 515 S. Wilson, second floor.

✻**Horizons Magazine** is offering a scholarship for students of Vietnamese ancestry. Undergraduate students who are under 28 years of age may apply. Applications must be postmarked by August 5, 1994.

Jewish Family and Children's Services is accepting applications for student loans, grants, and scholarships of up to $5000. Jewish students who are residents of San Francisco, the Peninsula, Marin or Sonoma Counties (for scholarships and grants), or residents of the Bay Area (for student loans), and who demonstrate financial need and academic achievement are eligible to apply. To receive an application, call (415)561-1226 or come to the financial aid office. Applications are accepted throughout the year.

The **John Gayles Educational Trust** is offering financial assistance to Canadian and American citizens. Selected students will receive up to $2,500. A minimum GPA of 2.7 is required. Deadlines range from April to November. For an application, send a self-addressed, stamped #10 envelope to: The John Gayles Education Fund, Attention R. James Cougle, Administrator, P.O. Box 4808, 712 Riverside Drive, Fredericton, New Brunswick, Canada E3B 5G4.

The **National Hispanic Scholarship Fund** is offering scholarships to qualified Hispanic students. Applicants must be full-time, day-time students who have completed a minimum of 15 college credits and are U.S. citizens or permanent residents of the U.S.. The deadline to submit applications is June 15, 1994.

The **Asian Pacific Women's Network**, Los Angeles, announces it's 1994 scholarship program. Four $1000 scholarships will be awarded to women of Asian or Pacific Island ancestry. Applicants who are attempting to make major life changes by pursuing new careers, and recent immigrants who are studying English as a second language are especially encouraged to apply. All eligible applicants must reside in one of the Southern California counties. The application deadline is June 30, 1994.

The **Bakersfield Desk & Derrick Club** is accepting applications for the Wilma Addington Memorial Scholarship. Applicants must be Kern County residents, and must be pursuing a degree in an energy related field. Application in letter form should be submitted to the following address: Jan Walker, Chairman, Desk & Derrick Club Scholarship Committee, P.O. Box 11064, Bakersfield, CA 93389-1064. The Financial Aid Office has more details. Applications are due September 1, 1994.

Junior Class President

FROM PAGE 2

courage more people to become involved.

In finding a Commencement speaker, I believe it is important to start the process early in order to give the Commencement committee a choice from a pool of qualified speakers. In an effort to provide the Commencement committee with a list of candidates by second term, I would begin the process of finding a Commencement speaker early in the year. By starting the search process early, our chances of securing a good speaker in high demand improve significantly. Then, if our first choice become unavailable, the committee will have more time to find a decent replacement.

While the job of Junior Class President is not endowed with a great deal of responsibility, I would take the job seriously if elected. I would appreciate your vote for the position of Junior Class President.

Srdjan Sobajic

Hmmm...How do you start a statement like this? By telling you how awesome a candidate I am? By telling you not to vote for my opponent and start some mud slinging? Well you already know that. But mud slinging is what I'm about. That's mud, as in *Mud*eo. Fortunately, the Mudeo is only one duty of the Junior Class President. Another, and certainly, a more serious, task is the choice of the Commencement speaker for our class. I would endeavor to push a speaker candidate, chosen by the students, to appear at the Commencement and thereby get a student voice in the upper echelons of the administration. As for qualifications, I have recently been re-elected as SEDS Vice-President, guaranteeing organizational skills for events like Mudeo, and I have also been Ruddock House Historian this past year.

Thank you for your support.

Junior Class Secretary/Treasurer

Tom Maccarone

I am running for the office of Junior Class Secretary/Treasurer because I would like to help unite the Junior Class to make a difference that will be seen for years to come. I currently serve as Lloyd House Secretary, and I think I have shown in that position an ability to do things quickly and well and a willingness to take initiative. This office may seem insignificant compared with many other offices on campus, but it has great potential. The two duties of the office—planning a freshman/sophomore event and finding Commencement speakers—need to be done differently, and I hope to be one of the people who usher in the new era.

I think the more important of the two jobs is finding Commencement speakers. Since I have been at Caltech, the administration has failed to cooperate with the will of the students in selecting Commencement speakers. I am not sure whether their lack of cooperation was intentional, but the end result has been two consecutive classes who have been dissatisfied with the speakers at their graduation. If I am elected, I hope to start the search early and to be able to present to the administration a top five or top ten list of speakers some time during second term along with a least of people or groups of people who would be least desirable, such as college administrators with little national stature. Caltech is a prominent enough institution that we should be able to convince one of our top five choices to speak here if we ask more than a year in advance.

I also think something needs to be done to make the freshman/sophomore event something that more people will want to participate in. If I am elected, I hope to discuss ideas to improve Mudeo with the Junior Class at the same time we discuss Commencement speakers—early first term. I have some ideas of my own, such as including a game (I think it's called Assassin) during the term in which each freshman and sophomore who wanted to participate got the name of a member of the other class and had to kill that person with a water gun some time before the actual day of the event. Points could then be assigned to the classes for each kill. In any event, I hope to transform this event into something to bring the Junior Class together to plan and set up an event for the freshmen and sophomores to participate in.

David Plurad

When I decided to run for Junior Class Secretary/Treasurer, I had these dreams about what would happen if I won. Well, maybe not exactly dreams, because dreams are getting a 4.0 GPA, inheriting a million dollars, or winning the World Series with a home run so you could say, "I'm going to Disneyland!" when the announcer asks what you are going to do next. So I'll just call them ideas—good ideas about Mudeo and our Commencement speaker.

Mudeo will be a good old-fashioned day in the sun (hopefully). Free food and refreshments to draw the underclass students and to keep everyone energized while demonstrating their prowess in playing in mud. Not a little splash of water mixed into the dirt, but messy, wet mud. It should be a source of easygoing stress relief for all.

The choice of Commencement speakers over the past few years have not been quite up to par in a few people's opinions. About all I can do, with the assistance of the Junior Class President, is try again next year. Maybe if we work, not just within the junior class, but with the graduate students and the Administration, we can get a speaker all parties can be satisfied with. If, in the unfortunate chance, we do end up with a poor speaker, I guess you can complain to me about it.

So if I do win the election and someone comes up to me and asks what I'm going to do next, I'll say, "I'm going home. It's almost summer vacation, you know?" Good luck on finals, and don't forget to vote for David Plurad for Junior Class Secretary/Treasurer.

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