

## Laser Uses Explained At Lecture

Diffraction gratings, slides, and mirrors were among the devices used by Dr. Nicholas George in demonstrating the laser to a capacity audience at Beckman Auditorium Monday evening. George's talk, another in the series of weekly demonstration lectures presented by the Caltech Committee on Institute Assemblies and Programs, was entitled "Laser Facts and Fancies," and dealt primarily with the nature of the light emitted in a laser beam.

The program began with a series of slides explaining the history of laser development, which started in the early 1950's. George complained that early breakthroughs were seized upon too readily by over-imaginative writers. He warned that much research still remains to be done before scientists will even begin to understand all the implications of laser theory.

### Applications for Outer-Space Communication

Dr. George, who attended the University of California at Berkeley and completed his graduate work here at Caltech, next discussed the possible applications of lasers. Their use as a means of communication in space was shown to be somewhat impractical at the present time. The ruby, one of the best laser sources, still emits light that is much weaker than sunlight. With proper filtering techniques, however, this disadvantage can be partially overcome.

The great coherence of laser light was the next fact emphasized by the speaker. Ten million times more intense than ordinary light, it is also more near-

(Continued on page 2)



Dr. Abraham Maslow, Professor of Psychology at Brandeis and the current YMCA Leader of America, will be on campus today and tomorrow.

## DuBridge Speaks On Science And Government

BY MAMMA MEO

President Lee DuBridge addressed the Seminar on National Security last Wednesday in 168 Church on "Science and Government in the 1940's and Since." He traced the development of scientific advisory committees from their purely technical role at the beginning of the Second World War to the policy-making position of the National Science Board today.

The National Defense Research Committee, formed at Caltech a year-and-a-half before the outbreak of the war, coordinated and initiated the diverse researches of wartime scientists, but only in a confined, technical capacity.

MIT's Radiation Lab, which directed America's efforts in radar during the war, advised many military men on its use. The first policy decision in which scientists took part was the conversion of US bombing from visual to radar methods.

### Bombing A Pickle-Barrel

The USAF prided itself on "Pickle-Barrel" bombing, which could land a bomb in a pickle barrel in Arizona on a cloudless

day from four or five thousand feet. Over Germany, however, there were anti-aircraft fire, fighter opposition, and stormy weather. Due to the scientists' efforts, the flyboys converted to trusting the "black boxes" supplied by the Radiation Lab.

DuBridge concluded by emphasizing the high-level activities of influential groups such as NASA or the Presidential Scientific Advisory Committee.

## Big T On Time

The 1965 **BIG T**, under the editorship of Bill Broste, is in production according to schedule. The first third of the book has already been submitted to the publishers, and the second third will be ready for the January 22 deadline.

This year's **BIG T** has been expanded by about thirty pages in order to show a broader and more detailed cross-section of campus life. A spring supplement will depict the year-end activities that could not normally be included in the **BIG T**.

## Maslow's Stay Cut Because Of Flu

Dr. Abraham Maslow, the YMCA Leader of America, missed some of his scheduled appearances on campus because of the flu. The 11 a.m. assembly in Dabney Lounge was cancelled yesterday along with the informal discussion in Winnett Lounge.

His lunch and dinner engagements were cancelled, and it was uncertain whether he could make his major address in Beckman yesterday at 8 p.m. The subject of the speech was to be "Science and Self-Actualization." It is expected, however, that Maslow would follow his announced schedule for today and tomorrow.

### Third Force

Maslow, a professor of psychology at Brandeis University, is advocating a "third force" of psychology. This is a modification of the Freudian and "experimental-positivistic-behavioristic" theories in that he attempts to understand man by studying clinically verifiable hypotheses of psychology.

Maslow's schedule for today begins with an informal discussion in Winnett at 10 a.m. followed by the Grad Sack Lunch in the Y Lounge at noon. Another informal discussion begins at 2 in Winnett with a panel discussion with visiting psychologists and psychiatrists following. After dinner in Lloyd there will be student reception at the home of Professor Sweezy at 9 p.m.

### Tomorrow and Tomorrow

Tomorrow Maslow will meet with Professor Bures' Pl 6 class. He will eat lunch in Ricketts and end his stay on campus by discussing his reactions to Caltech in Winnett at 4 p.m.

The host committee includes Lynn Melton as chairman, Peter Balint, Doug Josephson, Luther Perry, Bill Satterthwaite, Steve Watson, Tom Williams, Jerry Yudelsohn and Tom Huff as staff advisor.

## Lloyd Tops In Charities Drive

Lloyd House, with an average contribution per man of \$5.95, easily topped all other houses in the 1965 ASCIT Charities Drive. Thus Lloyd is the lucky winner of the usual steak dinner, shoveled cheerfully by certain generous faculty members, to be held Wednesday, January 27.

Ruddock's contribution of \$4.47 per capita was second to Lloyd's; Blacker raked third with \$2.72 per man. The total contribution to all three charities was \$1865.07—34 graduate students also contributed the sum of \$168.00. According to Eric Young, who headed the drive, some \$150 will be lost to expenses incurred.

Of the three charities, the Planned Parenthood Federation of America received the greatest total allotment. The National Multiple Sclerosis Society ranked next, followed by the World University Service. The relative amounts given to the PMP from each house ranged from Fleming's proportional low to Dabney's grant of over half their total contribution.

The money-rustling fast-talking hucksters from each house who spent their time making the ASCIT Drive a success deserve

(Continued on page 4)

## Tours of JPL Offered

BY JOHN ROUSE

In the continuing battle against apathy and antipathy for science, the Y is initiating a series of tours of the various departments at JPL. Dick Hackathorn has been making inquiries at JPL, and has received very favorable response from officials there.

On invitation from Bob Miller of JPL's Public Information and

Education Office, the ad hoc JPL Relations Committee, headed by Hackathorn, visited the Lab last Monday afternoon.

### One Gozinta Four

The committee divided itself into four groups, which saw the Data Systems, Lunar and Planetary Instruments, Spacecraft Control, and Research and Advanced Concepts sections. Each group of

two or three students spent about two hours in the section, seeing all the equipment and holding an informal discussion with the section leader.

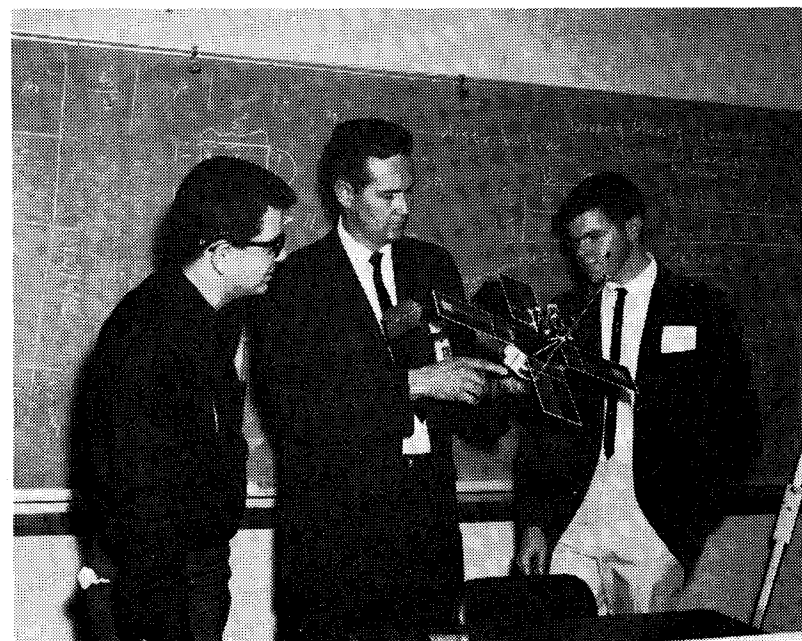
This intensive tour, concentrating on one section, gave the students involved an opportunity to really get to know that phase of JPL's work.

After the tours, the groups recombined and met with Dr. William Pickering, Director of JPL. He expressed his approval of the program, and then discussed various phases of JPL's work.

### More Tours Coming

The details of this tour program have not yet been worked out, but it will probably consist of two or three trips a week, each trip to a single section. Groups will be limited to about five people, as any more gets to be unhandy for informal discussion.

The tours will be about two hours long, to assure sufficient time for the group to ask all of its questions and to see all that there is to see. There will be a tour this Monday. For details, see any of the committee members, namely: Bob Grant, Dabney; Ken Kimball, Lloyd; Vincent Johns, Blacker; Gary Christoph, Fleming; John Rouse, Ruddock; Chris Shelton, Ricketts; and Greg Thompson, Page.



A JPL scientist shows a model of the Mariner IV spacecraft to Tech students John Rouse and Ken Kimble. They participated in a YMCA sponsored tour of JPL, initiated to arouse interest in science.

## Notices

### SPECIAL PHI EXAM

will be given tomorrow night at 6 in Chandler.

### TRACK MANAGERS?

Anyone interested in managing track for a few hours a week (to get PE credit) contact Shelby Chapman in 218 Ruddock or put a note in the "Q" box in Ruddock.

### CHRISTIAN FELLOWSHIP

Dr. Mark Biedeback will speak on "The Sin of Pride," tomorrow noon in Chandler. Undergrad meals transferred.

### STEVE & ERIC AT THE ICE HOUSE

The popular campus folksinging duo of Steve Clamage and Eric Jones will appear Sunday night at 9 p.m. at the Ice House, 24 N. Mentor.

### COIN CLUB

There will be a meeting and trading session for any interested coin collectors tonight in Lloyd conference room at 7:30.

### STUDENT ART EXHIBIT

Long, long, beyond in the future the Caltech Y will sponsor an exhibit of student art. If you draw or paint or photograph or whatever, prepare to enter one (or two, or many) samples of your work in the exhibit to be unveiled in Winnett during the second week of April. If you are interested see Jesse Grodnik in Lloyd.

Editorials

# Beckman Fee

Beckman Auditorium was an expensive building to build and is an expensive building to operate, due to its exotic design and decoration. In fact we have been told that it costs something like \$800 or \$1000 just to open it for one night; and so any group that wants to use it, for some event has to pay a fee of \$150 to help pay for heating, lighting, air-conditioning, cleaning-up, etc. This fee was not charged last year (but rather absorbed by an Institute "general fund") because the building was new and those in charge wanted to encourage its use during its weaning period.

Now, it is true that this fee does entitle one to use Beckman for an evening, as well as to use the publicity and sales services of the Ticket Office. It is also true that the fee can be waived by not charging admission to the event, as is done with public-service programs such as the Caltech Lecture Series, or Dr. Maslow's lecture last night. But such an act of generosity is not always possible for the sponsoring group: the cost of obtaining the Brothers Four for tomorrow, for example, requires that ASCIT charge admission for the concert — similarly for a Y-sponsored movie, or for a Drama Club play. Actually, in all three of these examples, the event is presented as a service to the Caltech community, without the goal of making a profit and only through the donation of time and work by many people.

Such events must, because of the auditorium fee, have increased admission rates (and hence smaller audiences) or have the extra cost absorbed by the sponsoring group, which in some cases is impossible. Meanwhile, events of little interest to students, such as the CSF District Convention of last year or the Monday night lectures, have their operating expense absorbed by the "general fund," because they have no admission fee.

We are not accusing the Institute of stealing students' money, for it is clearly making no profit from the auditorium; but the fee is a hindrance to student use of Beckman, a hindrance to presenting cultural events for all. Beckman is still a part of campus, not some majestic separate entity. Students should be entitled, by paying tuition, to use its facilities just as they use Winnett or Dabney Lounge. The last President's report says that, in Beckman "exciting new events are in prospect for the coming year. It is our hope that a new unity of spirit may thus be stimulated among students and faculty, as well as new opportunities for cultural activities and new opportunities to bring the entire campus into contact with leaders in education, science, engineering, art, and national and world affairs." If the Institute wants to encourage students to do the part we want to do, let it absorb the cost and make Beckman usable for us.

—Stu Galley  
Wally Oliver

# Chornbliss Talks To YR's

Rear Admiral W. C. Chornbliss spoke on the "Global Strategy of Communist Conquest" at the meeting of the Caltech Young Republicans January 13 in Winnett Club room 1.

Chornbliss, now retired, opened by declaring himself a "man without a party." His former party (after which the present Democratic Party is named) went "out of existence on March 4, 1933."

The overall strategy of Communist conquest, according to Chornbliss, has been centered on the destruction of the American free enterprise system. Chornbliss reasoned that the only obstacle standing between the Communists and world conquest has been the strong, diversified military strength provided by our free economy.

### We Need Propaganda!

Termed as ridiculous were the claims made by various extremist groups that certain high governmental officials are Communists. Chornbliss did imply, however, that the economic trend of the last 30 years has played into Communist hands.

Chornbliss closed by suggesting that an all-out propaganda campaign is needed to impress upon the American public the advantages of our free enterprise economy and the consequences of its failure.

# Lasers

(Continued from page 1)

ly monochromatic. The audience, using the tiny diffraction gratings passed out at the door, was able to distinguish the many basic colors of which ordinary fluorescent light is composed, compared to the uniformity of laser light.

The program was concluded with an invitation for the members of the audience to join George and his assistants for a question-and-answer session on the stage.

# H5 Notes

# Bayne Speaks On Italy Since 1945

"Liberty was that which was not taken away from you by the government." Quoting from Tacitus, Edward Bayne, of the American Universities Field Staff, thus characterized the Italian view of liberty at Tuesday's H5 lecture.

In his address, "Italy after 1945," Bayne pointed out that this residual, rather than participant" view of liberty is evidenced by the wide acceptance of Fascism, Communism, and Papism in that country. He also emphasized Italy's sectionalism, dating from its birth in 1870 from eight independent states.

Bayne, who covers Italy, Iran, Israel, and Somaliland for the AUFSS, also stated that post-war urbanization, industrialization, the rise of materialism and the decline of agriculture, have not changed most Italians' political philosophy; they still favor a strong centralized government.

### Somaliland?

This paternalistic concept carries over into industrial relations also. Italy is the first Catholic country to have been hit with the Industrial Revolution, and the effect is lopsided. Of Italian businesses, 0.7 percent employ 58 percent of the labor force, while 98 percent of Italy's firms employ less than six people each.

The large companies really take care of their employees.

Bayne cited the Olivetti Corporation, which loans employees money for housing, pays for their gas and repairs if they drive to work, maintains resorts for summer vacations, and provides scholarships for the children. In fact, 46 percent of a worker's wages is reproduced in fringe benefits.

Another lopsided effect is that the North has become an industrial center, while the South (north and south of Rome) has remained agricultural. In the South, says Bayne, one sees "happy peasants picking olives and doing other things under the olive trees." Still, workers steadily leave the South for Europe in search of better jobs. This produces a split in Italian politics, with moderate Northerners against radicals from the South.

### Political Confusion

Another political split exists along the familiar left-right lines. Communists and Socialists oppose Royalists and neo-Fascists, with the Christian Democrats in the middle.

There is, however, a third split, with clericals against anti-clericals. In this one, the Catholic Christian Democrats face the Socialists and the manufacturing interests.

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By Tom Greenfield



Charity begins at home and so, I suppose, should culture. In this spirit I was a part of the large audience in Dabney Lounge last Saturday evening to hear the reading of Dr. Oscar Mandel's "Gobble-Up Stories." I had the impression that the audience felt that it had to clap, not knowing quite why, at the end of each of the little monstrosities. Certainly the narrators Joan Tompkins and Donald Elson did a commendable job, but it was something like, as I heard someone in the next row remark, squeezing milk from the proverbial stone.

Calculated to be shocking in a trite way, each "fable" left me with the lingering doubt that one has when one has expectantly sifted through the dunghill and found at last only — dung. In cases like this perhaps it is best to follow Pursewarden's example: "When discussing a bad work of art he would say in tones of warm approbation, 'Most effective' . . . Once when he was drunk he added: 'The effective in art is what rapes the emotion of your audience without nourishing its values.'"

### Transmogrify Thyself!

Without overmuch authentic wit to offer up, and certainly little in the way of original truth to reveal, these proverbs seemed often to verge on insipid and timeworn prosaicisms.

Perhaps it goes to prove that authors can be esoteric without

ever needing the comprehension of an initiate audience, because frequently abstruseness is worshipped for itself (there is after all something fascinating about the smoke that thunders). And when one laughs one is laughing at oneself!

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# Big Game Tomorrow

by Jose

Well, senores, the moment of truth is approaching. Co-favorites Ruddock and Fleming knock heads tomorrow afternoon in what should be the deciding game of this year's Interhouse football season. The winner, barring an upset, should go through the season undefeated.

Fleming had a little trouble with two games last week. Inconsistent play kept their games with Dabney and Page reasonably close after the Big Red blasted Blacker onto the Athenaueum lawn last Friday. The Darbs, led by Gowen and Touton, held the Flem offensive machine completely in check for a full half, but Fleming erupted for

three TD's in the second half.

The men from Page posed the biggest threat to the Flem hopes of the championship thus far. However, Fleming prevailed 15-6, with two touchdowns in the first half, one to Vitz, the other to Green, and a safety on the last play of the game. Page scored once in the third quarter but failed to score the tying touchdown in the final period. By the way, Green now has eight TD's and two PAT's for 50 points scored in four games to become the second leading scorer in the "league".

### Prodigious Machine

Ruddock proved that its win over Dabney was no fluke by pulverizing Lloyd and Ricketts, 32-8 and 46-7, respectively. Thus, in three games this season Ruddock has scored 126 points to 21 for the opponents. Leading the Ruddock attack are Murray Sherman at quarterback and Ken Brown at left end (who has returned two kickoffs for touchdowns). This is amazing inasmuch as Ruddock does not return very many kickoffs.

The men-in-blue have a strong, well-balanced offense, but only an average defense. Their type of offense will cause Fleming problems as they will have to cover both Brown and Steve Blumsack

who has scored 60 points on 9 TD's and 6 PAT's in only three games. I favor Ruddock to win the championship, despite the fact that they have the more difficult schedule remaining, because of the edge Sherman has over Owens, the Fleming QB, in passing ability.

### Predictions

Page over Dabney by 1  
Ruddock over Fleming by 3  
Blacker over Ricketts by 7  
Dabney over Ricketts by 12  
Blacker over Lloyd by 6  
Ruddock over Page by 8  
Dabney over Blacker by 6  
Fleming over Lloyd by 20

### STANDINGS

Team	Won	Lost
Fleming	4	0
Ruddock	3	0
Page	3	1
Dabney	1	2
Blacker	0	2
Lloyd	0	3
Ricketts	0	3

### Charities

(Continued from page 1)

special mention: Ben Cooper, Joyn Eyler, John Harkness, Bruce Hudson, Bob Piccioni, George Sharman, and Eric Young, who supervised this year's drive.

## Freshmen Defeated

Awed by a startling lineup that consisted of three six-foot-four players, the Caltech frosh basketball team succumbed to Claremont-Harvey Mudd by a score of 65-41. Being consistent with the style used against the other conference powers, the Beavers played a loose first half, giving CHM plenty of shooting room and not fighting hard for rebounds; the result was a halftime deficit of 18 points.

The second period brought with it a new Tech team; hustling their butts off, the frosh battled the Stags on almost even terms, again demonstrating the fact that Caltech has the potential to pull off quite an upset one of these fine winter days.

Dick Barton of Claremont led the scorers with 26 markers. The Beavers showed scoring balance, even though nobody reached double figures.

### Wrestlers

(Continued from page 3)

ical Faulconer reversal pin. The 157 pound class pitted Woodhead of Tech, a frosh this year but one of the team's outstanding wrestlers, against Blackinton of CHM (not to be confused with the famous Grant Blackinton of Ruddock, his brother). In the inimitable Blackinton style, he (Blackinton) was pinned after 1:10 of the second period.

Russ Crenshaw, also a frosh, decisioned Snipper of CHM 5-4 in the 167 pound division. It should be noted that Snipper, a sophomore, was a CIF (California Interscholastic Federation) finalist in his high school days. Howard Powell finished off the evening with a 7-3 decision over Davidson of CHM.

The final score was Caltech 27, CHM 3, as Tech is well on the way to a third league championship. Amazingly enough, Tech has a fantastically good wrestling team this year and, if you want to see some good college wrestling, be sure to support the team and come to the matches. They only last an hour.

### EGAD!

Every year as a special end-of-the-year splurge, the Tech produces the **Hot Rivet**. The frosh might have seen some random green, pink or spotted copies floating around. To give an idea of what this great literary effort is like, this is one of the outstanding features taken from last year's report:

Egad!

One: So Marge is going to marry her engineer?

Two: Yeah, she had a weak moment and let him torque her into it.



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Discuss opportunities with members of STL's technical staff on campus

JANUARY 21 and JANUARY 22

If you are receiving your M.S. or Ph.D. during 1965, we invite you to join this select group, which is working on projects such as Pioneer, Orbiting Geophysical Observatory (OGO), nuclear detection satellites, and variable-thrust descent engines for Apollo and Surveyor lunar landings. You will find exciting and creative assignments at TRW in the area of your major discipline. Investigate one or more of these fields: Theoretical Physics, Systems Engineering, Radar Systems, Experimental Physics, Applied Mathematics, Space Communications, Space Physics, Antennas and Microwaves, Inertial Guidance, Analog Computers, Solid State Physics, Computer Design, Telecommunications, Digital Computers, Guidance and Navigation, Electromechanical Devices, Engineering Mechanics, Applied Aerodynamics and Propulsion Systems.

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