Massey On Murray On Mars
The Red Planet In Transition
by Philip Massey

Mars has had an atmosphere only for the last few hundred million years, and the new conclusions Dr. Bruce Murray stated at last week's physics colloquium, "A New View of Mars," suggests Mars has long been thought of the little red planet a poor, waterless world, one that might have had water and life but which now contains only some of nature's inhabiting perhaps only artifacts of some ancient and long-dead race. At least, that's what people usually think of as geologically. Indeed, Dr. Murray argues that Mars is a Moon-like planet to a geologically active one.

Continued on Page Two

Video Equipment Available To Techers At Beckman
by Patti Horne

An expensive idea is floating around this campus right now and I'm pushing it. Almost all you new and returning students, this is modern times, this is 1812, October 3, at noon in the Afternoon, a small group of people get together to discuss what should happen to some modern equipment. Mr. Frank Capra donated to the Institute.

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The new phone system now has a special emergency number.

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Continued on Page Five

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Volume LXXIV
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To Interested Freshmen
by Ettore Schroedel

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Tutorial subjects were chosen by mutual agreement of instructor and the freshmen (and upperclassmen in Bi 23). Among the subjects are molecular lasers, chemical engineering aspects of environmental problems, and electromagnetic fields related to their studies. The program is described by Dr. Pine as 'experimental' at this tutorial stage.

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Continued on Page Five
Undergrad Housing Problem Analyzed

by Etoin Schroedlu

[Author's Note - This column will exist in various combinatorial states with my college roommate millikan j. troll's Throop Beat. We will both certainly attempt to give you these columns and informative news reporting and commentary on campus activities. Suggestions are invited.]

One of the perennial controversies on campus, concerning availability of undergraduate housing, is in the news again. The couple of dozen freshmen unable to be placed in the undergrad houses were selected by the current policy of random choice. A decade and a half ago, before the New Houses were built, Tech did have to give priority to those coming from farthest from campus, on the grounds that a Southern Californian could more easily locate housing on his own that someone from New York or Florida. It seems to this author that the earlier policy was more reasonable.

Lonely Crowds

In any case, significant numbers of Techers have been cast adrift upon the local community to find housing as best they can. It seems far more likely to benefit local landlords of varying probity than do the students who are rejected. One Institute administrator, when asked why Tech did not assume greater responsibility for locating suitable housing for entering students, replied that other universities did not provide such a service. This reply begs the question. Tech, being small, could probably suffice such a service if it wanted to.

A further possibility is to give freshmen, rather than upperclassmen, priority in obtaining space in the Houses. This suggestion obviously met with little approval from the undergrads on the Housing committee, who are upperclassmen rather than entering freshmen, but upperclassmen are certainly more capable of handling the problems arising in arranging for off-campus housing.

Co-ops & Apartments

A better idea would be for Tech to add enough housing units to its current stock to allow everyone who wants to do so to have a place in some sort of Institute housing. There are no plans for building new undergrad housing. (In fact, when I saw the master plans seven years ago, they called for one hundred years of occupancy in the Old Houses, which hadn't happened by then.) Yet, there is the possibility of Tech addition various properties to its housing portfolio, if the money can be spared from other needs (which is very questionable).

The problem won't get better unless the Institute acts or the housing demand cycle moves away from interest in remaining in on-campus housing (which has happened at various times in the past, often coinciding with room and board increases). The chart of figures in Lyman Bonner's article shows that the last couple of years have had about as optimal an on-campus population as could be expected, or arranged.

Note to undergrad social science majors: at last word, the catalog requirement of a term of SS 142 will be removed in favor of a strong recommendation that the full-year course be taken. This may be as well, since the catalog had the wrong uniting term and for SS 142.

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Ingersoll Tells It All

by Dennis Malloose [Ed. Note — Dr. Andrew Perry Ingersoll, associate professor of planetary science at Caltech, became an interview subject at freshman camp when he talked about his problems with Albert Dickey and faculi. The California Tech Sec. of Soc. Sec. #]

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A Grandfather Clockwork

Violence Is Golden

by Phil Nehen

Many people spend their lives wondering what the future holds in store for the human race. Some of them see only sweetness and light; utopias in which the ills of human conduct have somehow been eradicated. Others have more nightmarish visions, such as George Orwell's 1984 in which doublethink becomes a way of life, doublethink the only means of communication, and freedom a hollow oldpalate.

If Orwell has predicted 1984 correctly, then one can easily imagine that Anthony Burgess, author of A Clockwork Orange, which Stanley Kubrick has brought to the screen, Bugees' utopia-gone-wild seems far less subtle than Orwell's in that freedom has been reenforced rather than eliminated.

In London of the near future, we find Alex and his gang of droogs, who exercise their freedom to rape, beat, plunder, and, otherwise make a nuisance of themselves. Alex might just be the product of his environment, one where every positive human value has been eliminated, leaving only the mean, petty, brutal, and vicious half of human nature behind. Alex is, if anything, a better man than his victims.

About the first third of the film chronicles Alex's merry escapades, in scenes which shock, nauseate, repel, yet enthral the viewer. His gang invades the home of a writer, stomping the man to near-death, then raping his wife before his helpless eyes, all to the tune of "Singing in the Rain." After all, a little Saturday night party is good clean fun, right boy?

Eventually, Alex falls into the hands of the government [calling them the law is an exercise in doublethink], and finds himself in prison. Alex finds prison intolerable, and will do anything to get out. The government proves willing as well, since the droogs, ruffians, thieves, and such are taking up much space in jails which will soon teem with political prisoners.

So Alex volunteers for what might politely be described as brainwashing. While forced to watch films of gang rapings, beatings, wars, and other of Alex's favorite recreations, he is given a drug which induces deathly nausea. True to Pavlov, after two weeks of this, any thought of hate, anger, or lust leaves Alex physically ill.

Thus "reformed," Alex can return to society "as decent a lad as you would meet on a May morning." That his problematic soul has been avenion constricted out of him seems to bother nobody but the prison chaplains, who but listen to him.

In the next several scenes, Kubrick spares no segment of his hypothetical society: all have been reduced to the same state of delirium as Alex. Alex's parents kick him out. Drunk old men mob him. The police [this from the novel] who do exactly the same thing as before, except now have the added protection of the blue uniform, nearly kill him. Finally, he wanders, sick and miserable, back to the house of the writer he nearly killed before. Not recognizing Alex as his assailant, the writer takes him in, hoping to use his conditioning as a political weapon against the government (the writer is a member of the opposition).

However, the writer recognizes Alex, and forces him to attempt suicide by playing Beethoven's Ninth. Now what might Beethoven's glorious Ninth, one of the crowning achievements of creative human intellect, have to do with this operation? Well, Alex grooves on Beethoven, almost as much as he enjoys rape. However, his brainwashers use Beethoven's music, which some have called Beethoven's "weapon against the government: the writer is a member of the opposition.

Therefore, Beethoven makes Alex as sick as, say, a nice bloody disembarrassment. Alex makes his exit through a third story window, but survives anyhow. In the hospital, he not only recovers physically, but also recovers his "free" state of mind — whether the fall undoes his brainwashing or whether it is done at the behest of the government is not certain.

So the story has come full circle. Exorcised from the brainwashing party now rots in Alex's old cellblock, and the government controls through its paid terrorists, nominally called policemen.

This bleak utopia has replaced law with mere government, freedom with mere license, love with mere sex; in short, has replaced humanity with bestiality on all levels. The film fascinates while it horrifies: without intellectualizing it becomes too realistic, too possible; and altogether too close a prediction of trends in our society.

The film benefits from technically virtuoso work, even in the stage of production. The music all comes from the classical repertoire, which has saved Kubrick a great deal on royalties. Henry Purcell's ornate and pompous "Music for the Funeral of Queen Mary" becomes the inauspicious, sinister wail in the transistors of Walter Carlos's synthesizer. The editing may well be the best job done for any film. And Malcolm McDowell brings the curious, absurd, and horrific pathos of a character that has been banished by Orwell to the audience.

A Clockwork Orange is calculated to disturb. It should leave one with a sinking feeling in the pit of one's stomach for the rest of life.

Outraced?

A Bright New Revelation

by Phil Nehen

The light show may be emerging from the dark ages, in a manner of speaking. Once the sophistication of the 153-decibel rock concert, light shows are decreasing in complexity, and increasing in artistic sophistication.

At least, that impression stuck with me when I talked to Josh White, who designed the light show which will accompany Virgin Fox at Beckman this coming Wednesday, Friday, and Saturday. Josh will give a seminar on Thursday, October 12, on the problems and possibilities of the art of light which will be open to all Virgil Fox ticket holders, and anyone else who wants to go.

Light shows have suffered, Josh explained, from being tied down to the location. "More involvement with a single performer" was needed. But at New York's Fillmore East, groups came and went, but the light show people stayed, with the result that each new group [including Virgin Fox] represented "just another job."

Revelation Lights, which will accompany Josh Fox, takes a different strategy. Rather than waiting for groups to come around looking for light people, Revelation Lights travels with Fox. A light show should be as artistic as the act, as exciting as the act, and as broad as the act.

Hence the company's slogan: "Light belongs with all music. Don't be a sissy, have some light. "The music of Bach has been around longer than lights," making it [a challenge and a responsibility] for the light man to develop an understanding — a feel — a love — for the music. It's not just the "other half of the experience."

Like classical music, a good light show should be abstract. 'The audience makes its own links between the abstract images on the screen and the music. In a word, it is creative.

In conclusion, we cordially invite Caltech students and faculty members to bank with us. Complete banking services including: Auto Loan Guarantees
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"SLAUGHTERHOUSE FIVE"

"9TH E. Colorado 499-1948"
Mars
Continued from Page One
Martian atmosphere is equally young. Of course, this leaves the question of where did all that carbon dioxide appear from.
Yes, it’s known that the Earth went through a period when there were numerous volcanos that supplied gobs and gobs of carbon dioxide to our air. Volcanos are produced by this outgassing. The output from Nix Olympica itself would be sufficient to explain tens of percent of Mars’ present atmosphere, and it is by no means the only volcano around. Perhaps Mars started out like the Moon, and it has just started recently to boil inside and form volcanos. It would account for the lack of any signs of middle history: there are things that are a few hundred million years old, but things that are — at most — a couple hundred million years old, but nothing in between. Perhaps Mars is only now going through the terrain-producing features that Earth went through much earlier.

Continued from Page One
all but the essential element for 1/2-inch video taping. (Essential to editing in a polished manner only, but this piece is not beyond reach.) The missing ingredient is an editing unit, which can be borrowed, rented, and/or confiscated with the right information and people of acquaintance.

The reason no one wants such is that it seems as though one, Chuck Newton, put a hell of a lot of work last year into making this equipment accessible at no cost to the student, and was left high and dry. No one wants the equipment now, because bad handling causes large repair bills. So after this time no one was overseeing the use of this stuff, it got mishandled frequently, and thus is comparatively rare. Some students, such as Steve Watkins, were inventive enough to use the VTR equipment as the medium for a term project. Their findings included the fact that one probably will put more time into videotaping their project than writing it up, but they got one hell of a learning experience out of the deal, and they did get credit for the work. I think that more students would make use of the facilities if they knew they could get credit, since this institution is so credit-oriented.

Well, OK fellas and gals, the equipment is available to you now through the Beckman offices. If this is indeed the 20th Century, let’s use some 20th Century techniques for presenting 20th Century ideas. If the problem is that you haven’t the faintest idea of what I’m talking about, call me, I’ll help you do what you want. You can also talk to Jim Weal, distributes the equipment out of Beckman; Steve Watkins, did a term project last year & got credit for it.

Bob Webber, helped teach the VTR class last year and is interested;
Bill Cassell, director of Public Relations is using the VTR equipment now.
I am Patti Horne, ext. 2451, Art Director of the Environmental Quality Lab, and I’m anxious and willing to help any student find out all they can about this media.
Well, Techers, got any ideas? ????

Tutorials
Continued from Page One
stage; response to the program was gathered at the end of the quarter. Eventually the program may include offerings for upperclassmen as well, if that former body casts off enough of its traditional apostasy.
A student or faculty member with an idea for a tutorial is invited to send word to Dr. Pine in Engineering.

THE CALIFORNIA TECH
Page Five

Spectrum Productions
A Prismatic Effect
by Marc Donner
Last week, this column mentioned an article about Spectrum Productions to be published in this edition of the Tech. Between then and now I’ve interviewed two fascinating people: Oscar Mandel, the producer, and Shirley Mameus, the director. Both of them were very helpful and supplied a lot of information about a group much ignored, and unjustly so, on the Caltech campus.

Oscar Mandel and Shirley Mameus, together with a set designer named Barry Frost, formed Spectrum in early 1972 as a non-profit, tax exempt corporation purposed to “produce unusual plays of high literary merit.” Spectrum Production 1 (SP1) was Moller’s Amphi­ tryon in March; and SP2 will be Bertolt Brecht’s Mr. Puntila and His Servant Matti which will run five nights starting October 24. SP3 will be Jon eson’s The Unpaid Killer to be presented in Febru­ ary of 1973.

Spectrum Productions has a couple of other goals, besides just producing unusual plays. They want people to see these plays and not have to spend $15 to $30 for a pair of tickets. The high pricing of tickets in commer­ cial theatre other than a handful of producer theaters out of a lot of good productions. Also, Spectrum wants to experi­ ment with plays. Commercial theater is so expensive to produce that commercial producers cannot afford to put on anything except tried and true money­ makers. The only people who can afford to experiment are those “little theater” groups, like Spectrum, which have money to run a loss. The actors and actresses in Spectrum’s productions are professionals working without pay. They gain experience and exposure in these productions, not cash. Actors’ Equity actors, prohibited by their union from acting without pay, are not permitted to act in these produc­ tions. (Part of the reason for the prohibitive cost of commercial productions these days is the experience Equity has on the producers. Equity was originally formed to protect actors from exploitation by producers, but it quickly priced itself out of the range the small, poorer producers could afford to pay. This marked the beginning of “little theater” and experimental theater.)

Puntila was written in Finland in 1940 where Brecht was living as an exile from Hitler’s Germany. Later that year he crossed Russia and the Pacific and ended up in Los Angeles. Despite the turmoil of this period in his life it was the time of the writing of his greatest plays: Mother Courage, Galileo, and The Good Woman of Setzuan. Puntila is one of his best satires, the English translation was published in 1939.

Brecht’s style will disconcert many connoisseurs of fiction, who have been spoiled by the words of Dr. Mandel, “... we are asked to enjoy it like a work of art, and not as we might enjoy a play by Shakespeare or Racine, which we understand immediately.”

The Unpaid Killer, as director, supplied a wealth of information about the cast of Puntila. About one half of the cast also performed in the spring Spectrum Production, Jon Post, a Caltech student, and William Gurze, a faculty member, and Mary Eich­ bauer, the wife of a faculty member, make up the representa­ tives of the Caltech community in the cast. There are many well-trained, capable and experi­ enced actors and actresses and this production of Puntila prom­ ises to be an excellent one. Prices are low — see the ticket office for tickets.

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STATE SCHOLARSHIP APPLICATIONS
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Undergraduate college students who are in need of financial assistance to continue college should file a State Scholarship application. Approximately 11,200 new State Scholarships will be awarded in April 1973 for use in 1973-74. Most of the new scholarships will be awarded to high school seniors but approximately 1,700 will be available to current college students who are already in the State Scholarship Program.

State Scholarships can be utilized at any accredited four-year college in California, plus the California Maritime Academy. The awards range from $500 to $2,200 at independent colleges, $300 to $600 at the University of California, and are in the amount of fees charged to students at the California State University and Colleges (approximately 1,700 new State Scholarships will be awarded in April 1973 for use in 1973-74). Most of the new scholarships will be awarded to high school seniors but approximately 1,700 will be available to current college students who are already in the State Scholarship Program.

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The California Tech "Foreign Area Problems" AUFS Sponsors Seminar

by Paul Harper

Undergraduate students are encouraged to attend a seminar in foreign area studies. The seminar is sponsored by the American Universities Field Service and will be held at the California Institute of Technology on October 12. The seminar will be open to all students who are interested in foreign area studies.

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**IH Softball Games Start Next Week**

By Bob Kieckhefer

Caltech's water polo team is now riding on a two-game winning streak, their longest since 1970. Yesterday afternoon they fought to a 0-0 tie over Pierce JC. Last Saturday they swamped Loyola University, 13-6, while most of the campus slept. These victories give the tankmen a 2-1 win-loss record.

Defensive Battle

Yesterday afternoon's game against Pierce was a tight defensive battle. Steve Bitondo's goal soon after the game opened put Tech ahead, but Pierce came back to tie the score 1-1 at the end of the first quarter.

Howard Bobb scored one goal and Russ Desiderio got two in the second period, giving Tech a 4-2 halftime lead. By this time a large home-team crowd had gathered to cheer on the Techers.

Desiderio and Bitondo scored again during the third quarter, completing Tech scoring for the day. During the fourth quarter, the team concentrated on defense, allowing only one goal and giving Tech a hard-earned 6-4 victory.

Too Early in the Morning

The Techers started slowly against Loyola and were behind 2-0 at the end of the first quarter. Loyola's captain fouled the Techers during the second half, giving Tech a hard-earned 6-4 victory.

Water Polo Team Beats Loyola and Pierce; Record Now 2-1

Water Polo Team Beats Loyola and Pierce; Record Now 2-1

**SPORTS!**

**WHAT DO YOU MEAN, no P.E. credit for showering?** Photo by Dave Peison.

**TRAVEL**

**EUROPE – ISRAEL – EAST AFRICA.** Student flights. Inexpensive student, camping tours throughout Europe, Russia, and Mexico. Official SOFA agent for inter-European student charter flights, including Middle East and Far East. Student ski tours. European used car purchase system. Contact: ISCA, 11687 San Vincente Blvd, No. 4, L.A., CA, 90049. Tel: (213) 826-5669, 826-9595.

**Buying or selling something? You, too, can take out an ad in the California Tech!!! $1.50 per inch plus 25¢ per extra line for Classified. Bring ad copy to the Tech office, or phone ext. 2154. O.K.?**

**Go See a Game!**

**Friday, October 6**

- 2:00 p.m. Football
  - Claremont–Harvey Mudd JV
    - Claremont-Harvey Mudd JV
  - UC Riverside Tournament
  - Away

- 2:15 p.m. Water Polo
  - Away

- 4:00 p.m. Cross Country
  - Pomona
  - Away

**Saturday, October 7**

- 10:00 a.m. Soccer
  - Claremont–Harvey Mudd
    - Home

- 10:00 a.m. Water Polo
  - UC Riverside Tournament
    - Away

**Wednesday, October 11**

- 3:00 p.m. Soccer
  - Redlands
  - Home

- 4:00 p.m. Water Polo
  - PCC
  - Home

**Friday, October 13**

- 2:00 p.m. Football
  - La Verne JV
    - Home

- 4:00 p.m. Cross Country
  - Claremont–Harvey Mudd
    - Home

**Saturday, October 14**

- 10:00 a.m. Water Polo
  - Cal State Los Angeles
    - Home

- 10:30 a.m. Soccer
  - Occidental
  - Away

**NOW THRU OCT. 8**

GEORGE CARLIN
AND KENNY RANKIN
COMING NEXT
JOHN TRINE

**CHANDLER'S**

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Pasadena, California
INFINITE IMAGES—A CORRIDOR OF EVER-EXPANDING SPACE

This structure, by Domingo Alvarez, a Venezuelan architect-sculptor, succeeds in creating a total environment for the viewer. Built of mirrors and brightly colored neon lights, the world created inside the corridor appears unending. The visual experience is so extraordinary that ABC-TV News sent its cameras to cover the New York opening of this highly imaginative exhibit.

Domingo Alvarez is professor of design at the Universidad Central de Venezuela. In addition to architecture and urban planning, he has created a unique body of works fusing diverse media from painting to music. INFINITE IMAGES represents one facet of Alvarez’ desire to make the viewer aware of himself as one of the elements of his own environment.

Exhibition hours: 10 a.m.—1:30 p.m.; 4 p.m.—8 p.m. (and 10:30 p.m. to midnight Wed., Fri., Sat.)
Exhibition price: $6 (ICIT students, faculty & staff—$3.50)
SUNDAY THROUGH SATURDAY, OCTOBER 8 THROUGH 14, 1972
on stage at Caltech’s RAMO AUDITORIUM (Baxter Hall of the Humanities, San Pasqual, west of Chester, Pasadena)

Caltech Faculty Committee on Programs
and
SPECTRUM PRODUCTIONS
present

Puntilla and Matti

by BERTOLT BRECHT

This is the long overdue West Coast performance of one of Brecht’s funniest and sharpest masterpieces. Puntilla, a Falstaff who owns land in Finland, is one of the glorious drunkards of the modern theatre—a villain who runs away with the show. Shirley Marneus will direct; Barry Frost is designer and technical director; Oscar Mandel is artistic supervisor. Included in the cast are: Leslie Thompson (Puntilla), John Chilton (Matti), Marian Johnson (Eva), and Byron Mitchell (the Attache).

Following the performance on WEDNESDAY, OCTOBER 25, the audience is invited to participate in an informal, on-stage meeting with cast and director. Everyone interested is cordially invited.

Tues. through Sat., Oct. 24 through 28 at 8 p.m.
RAMO AUDITORIUM in Baxter Hall of the Humanities
San Pasqual west of Chester
FREE PARKING in adjacent Beckman parking lot
General Admission: $3 Students: $2
CALTECH STUDENTS $1
Tickets at Caltech Ticket Office, north of Beckman Aud.
Mail Code 332–92 Telephone ext. 1652