

letters

today than it has ever been before for scientists, in their concern for the welfare of others, to participate in studies and investigations whose results indicate that present systems and regulations give inadequate protection to our people. When these scientists have academic tenure they can continue their studies and investigations. When these scientists work in private or governmental laboratories without the protection of tenure, we hear stories of cases where it is alleged that individuals were fired because of outside pressures that did not approve of the work of the individuals in question.

Powerful forces are gathering on the horizon, and I predict that in the coming years you will see many attempts to wipe out academic tenure by legislation or by edict. There are many people in our communities who believe that the university long-hairs are anarchists, trouble-makers, and that the country would be better off if we would get rid of this whole bunch of "kooks." How strange it is to find that the most reactionary elements in our society are working hand in hand with the self-anointed avant-garde liberals who have been speaking out at our recent meetings. It is all the more strange when we realize that these very same liberals, if they achieve academic positions, will be among the most ardent protectors of academic tenure. The politics of emotion and of non-think do indeed produce strange bedfellows.

Albert A. Bartlett
*University of Colorado
Boulder*

New UFO center

More than a year has passed since the Air Force formally closed its Project Blue Book, which acted as a national center for the receipt of reports of certain types of strange phenomena more commonly known as UFO's.

As consultant to that project for many years I am aware that neither the closing of Blue Book nor the Condon Report has laid the UFO problem to rest, and a number of my scientific colleagues and I have become concerned lest data of potential scientific value be lost for want of a reporting center. As evidence that the subject is still very much alive under the covers, I can cite not only my own personal mail which continues to contain UFO reports from reputable persons but also news-clipping services. The latter show an almost complete absence of UFO reports from urban dailies but a continued spate of UFO reports from small-town newspapers, where the editor is either less sophisticated, or less prone to be influenced by officialdom, or where he may have

knowledge of the source of the UFO reports.

It has been my estimate over the past 20 years that for every UFO report made there were at least ten that went unreported. Evidence for this comes from the Gallup Poll, the many UFO reports I subsequently learned of that were not reported to the Air Force, and from my own queries. There has always been a great reluctance to report in the face of almost certain ridicule. It would seem that the more trained and sophisticated the observer, the less prone he is to report unless he could be assured of anonymity as well as respect for his report.

Accordingly, in order that material of potential scientific value not be lost, and in order that persons, particularly those with scientific training and experience, can submit a UFO report without fear of ridicule and publicity, my colleagues and I, all associated with universities, hereby offer to act as a receipt center for UFO reports that otherwise would almost certainly be lost to science. I will be personally responsible that the data so submitted will be treated seriously and that no embarrassment to the sender will result. Names, for instance, will be immediately disassociated from the report and not used without specific written permission of the originator.

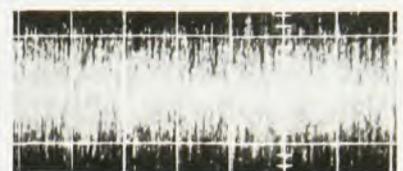
It may be of interest to note, in passing, that over the years I have been the recipient of UFO reports from many highly trained technical people and scientists. It is a gross but popular misconception that UFO reports spring from "ding-a-lings." A study of the record shows that such persons are almost entirely absent. The address to which UFO reports may be sent is: J. Allen Hynek, Chairman, Department of Astronomy, Northwestern University, Evanston, Illinois 60201.

J. Allen Hynek
*Northwestern University
Evanston, Illinois*

MIT-SLAC collaboration

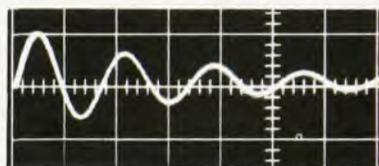
Recently a report (February, page 17) in the "Search and Discovery" section of *physics today* may have left some of your readers with the impression that the program of deep inelastic scattering measurements was entirely a SLAC effort. The experiments were done at SLAC by a collaboration of physicists from the Laboratory for Nuclear Science at MIT and a local group at SLAC. The collaboration began some years before operation of the SLAC accelerator when J. I. Friedman and H. W. Kendall of MIT joined their forces with several other groups to design and build the SLAC Spectrometer Facility. Since SLAC became operational, the MIT

continued on page 66



P. A. R. SIGNAL AVERAGERS OFFER:

- Low Cost
- Easy Operation
- Fast Readout
- High Noise Rejection
- Excellent Frequency Response



P.A.R. averagers have recovered repetitive waveforms from noise in applications as diverse as alpha rhythm analysis and the study of phosphorescence. Most likely, one of our models will help you obtain more data from a noisy signal.

The 160 Boxcar Integrator scans across a signal to reconstruct its waveshape or to study a portion of it as small as 10 ns in duration. FS sensitivities < 50 mV can be obtained. Price: \$4350. The Model CW-1 extracts waveforms with durations as short as 1 μ s and provides FS sensitivity to 0.2 V. Price: \$2150. The TDH-9 Waveform Eductor™ uses a 100 point memory to store, average and reproduce waveforms with durations ranging from 100 μ s to 11 s. Price: \$3500. The otherwise identical TDH-8 uses a 50 point memory. Price: \$2750.

For full information, demonstration or applications assistance, contact your P.A.R. representative, mail the coupon below, or call us at (609) 452-2111.



**PRINCETON APPLIED
RESEARCH CORPORATION**
Box 565, Princeton, New Jersey 08540

Gentlemen:

- Please arrange a signal averager demonstration.
 Please send more data on signal averagers.

Name _____

Title _____

Organization _____

Address _____

City _____

State _____ Zip _____

Phone _____

119

**High Power—High Frequency
Pulsed or C.W. Oscillator**



PG-656-C, Mod VI

Power Output C.W. 100 watts
Frequency Range 0.500 — 100 MHz

Continuously Tunable
Harmonic Content (Mostly Odd) <13%

Pulse Performance—Partial list

Peak Power >300 watts
Frequency Range Standard .200 — 177 MHz
PRF — Max (Ext. gate) 300 KHZ
Duty Cycle 30%
Frequency Range Extended 12 KHZ
Pulse Length 1–30 usec

Additional Features Available

Use as Gated Amplifier Separate Pulse Width and Amplitude Controls



Note: PG-655-C, Mod V has the above features except for C.W. Power Limit of 20 watts



VHF Receiver VR-720—55–220 MHz

Designed for pulsed input operation where severe overload conditions occur, the VR-720 continuously tunable receiver can accept pulses with 300 peak to peak over a 55–220 MHz range because of a hybrid tube transistor input. No frequency conversion is used so there are no side images or spurious frequency responses. Other features are:

Input—Separately tunable to accommodate 10–100 pfd effective source.

Band Width 7 MHz
R.F. output (93 ohms) 1 v p to p
Noise figure 3–4 db
Gain Max 80 db
Gain Range 40 db
Recovery Time 2 usec
Weight 14 lbs
Chassis—Rack Mountable 19 × 5¼ × 8½

Arenberg Ultrasonic Laboratory, Inc.

94 Green Street, Jamaica Plain, Mass. 02130
Telephone Area Code 617 JA2-8640

letters

continued from page 15

group and SLAC's group A have collaborated in a series of electron scattering experiments, including the deep inelastic experiments.

Richard E. Taylor
SLAC
Stanford University

Geophysics disagreement

Having read the recent article on "Opportunities in Geophysics" (February, page 23) by my senior University of Michigan colleague H. Richard Crane, I find myself compelled to state my disagreement with both the specific comments contained therein on the optimum education of a physical oceanographer, and with the general spirit of complacency expressed most explicitly in the concluding paragraphs of his article.

I am moved to write by the vivid impressions left with me by the succession of physics graduate students who have come to inquire of me as to their chances of obtaining a research position in oceanography upon completing their PhD in physics. I saw this same concern mirrored in the questions put to me by a group of physics seniors when I met with them earlier this winter for an evening seminar.

The section of Crane's article dealing with oceanography begins with the statement: "Oceanography is best entered by someone who has completed an MS or even a PhD in one of the basic disciplines such as physics." This statement should be inscribed in the same ledger as the following: "Physics is best entered by someone who has completed an MA or even a PhD in applied mathematics." I suggest that both these statements may reflect the vested interests of certain departments, but neither of them is responsive to the legitimate needs of the majority of students. Our students require (and, what is more, expect) to be able to embark on a coordinated (may I say efficient?) curriculum that will, if they are diligent, take them from freshman matriculation to the PhD in something like seven or eight years. I believe that we should devote our efforts to turning out effective, contributing, scientists in this time span. If there is no apparent effort on our part to do this then we will with justification be accused of being unresponsive academic mandarins. Unless a student wishes a protracted formal education I would strongly recommend that he not defer his entry into oceanography beyond the beginning of his graduate years.

The deficiencies that exist in today's undergraduate physics curriculum in preparing a student for graduate study

in physical oceanography are essentially those that Crane cites Landsberg as identifying in discussing preparation for graduate study of atmospheric physics. I wish to suggest to Crane and others who recognize that "recultivation may require changes in the curriculum and research experience, perhaps reaching down into the physics major program" that they need not look far in seeking informed opinion as to what these changes might entail.

Lest the reader come to suspect that I harbor resentments against the physics community, let me hasten to say that I hold the science of physics in high esteem. Indeed, although I received my PhD in oceanography and have for the past three years taught courses in that field, I was schooled through my MS in physics, and spent three fruitful years as an assistant professor of physics. I chose to forsake the teaching of physics for the teaching of oceanography because I felt that I could more closely relate the insights gained in my research to my classroom presentations. This has indeed proved to be the case.

Edward C. Monahan
University of Michigan
Ann Arbor

The author comments: As I stated clearly at the beginning of the article, my only sources of information and opinion were several of the elder statesman in the geophysics area. The only exception was that one of the respondents included a quote from a young faculty member. My job was reporting and editing, except for the concluding remark that was termed "complacent." That the views on the ways of entering oceanography and the chances of employment expressed in the foregoing letter differ from those I got from my sources is par for the course and not of my doing; however I can, and probably should, be faulted for not directing my inquiries to a more diverse sample. This is a point that might well be observed by the next author who makes a similar survey of a field. It is to be hoped that on balance such articles on neighboring fields have a plus effect in broadening the horizon for physics students and new PhD's. *physics today* has run several articles in this vein, and I am trying to assist the editor in his effort to bring others into being. They may be better for Edward Monahan's criticism.

H. Richard Crane
University of Michigan

More chemical-bond debate

The recent exchange of letters between Linus Pauling and J. C. Phillips (February, page 9) was interesting in that it demonstrated three points: (1) articles