

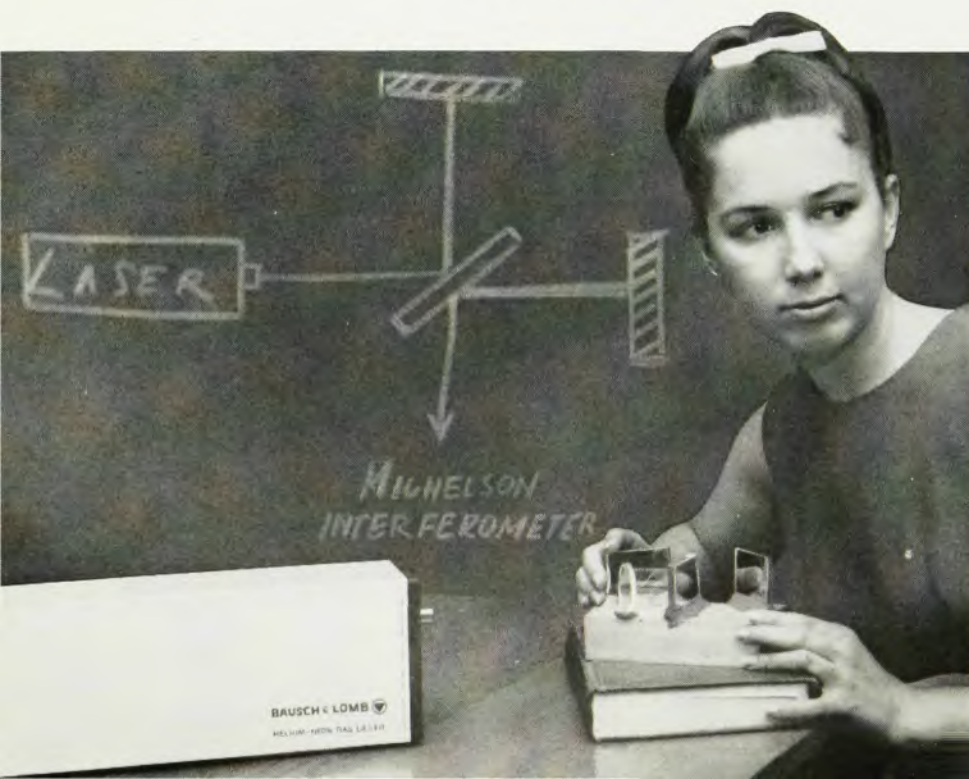
Bausch & Lomb Breaks the Cost Barrier to Laser Science Teaching

Now, every high school and college physics department can have a dependable helium-neon gas laser... to demonstrate optical principles, such as interference and diffraction patterns and to perform experiments in making and reconstructing holograms.

This revolutionary, low-cost laser is designed to be used routinely in classroom experiments. Operation is simple and dependable. Just plug it in and it begins to lase. Its .1mw power output is ideal for classroom use. Produces a monochromatic beam at 6328 Angstroms. Power requirement is standard 115-v, AC, 50-60 cycles.

Ask for catalog 41-2306. Or better still, place your order now. Bausch & Lomb, Scientific Instrument Division, 20430 Bausch Street, Rochester, New York 14602.

BAUSCH & LOMB 
SCIENTIFIC INSTRUMENT DIVISION



\$99⁵⁰

is its
incredibly
low cost

LETTERS

problem. The inconsistencies lie in the fact that although both may be classified as "strong interactions" they lack the scientific tenor of the remaining 12 abstracts listed under session AG. Another contradiction of editorial policy is the inclusion of a figure in Schwartz's abstract. Examination of this issue and about two dozen previous issues shows no drawings or figures accompanying abstracts. I believe emotional outbursts of this type can be better vented through more compatible religious or protest groups.

PERRY POLLINS

Lexington, Massachusetts

Case for "real" UFO's

Gerald Rothberg's review of several recent books on UFO's (including the Condon Report) mentions once again a common notion about explanations—a notion that has only today struck me as clearly flawed. Rothberg says: "The point of view of the project report is that all but a small percentage of UFO reports can be reasonably explained, including some that seem very strange. Therefore it is plausible that the residue of unexplained reports could also be explained if more information were available. . ." This was, in fact, the officially expressed point of



view of the Air Force's Project Blue Book, and it has been expressed in nearly the same terms by many scientists who believe that there are no interesting UFO's.

The flaw in this argument that has just occurred to me is so elementary

that I should have seen it years ago: The argument holds reasonably true if and only if the set of unexplained reports is similar to the set of explained reports save for completeness. That is not, as far as I know, the case.

Most "explained" reports involve sightings of nocturnal lights of one kind or another. A considerably smaller number involves misidentified aircraft, missiles, planetary objects and meteorological phenomena seen in the daytime. There is a scattering of hoaxes and delusions, but the above categories account for at least 90% of the explained cases.

The good *unexplained* cases, however, remain unexplained—not because there was insufficient information to allow a firm identification in one of the above categories, but because there is enough information in the report to rule out any of the above explanations. The UFO's that are kept on the books as "real" UFO's are kept in that category precisely because they do not fall into any ordinary class. Any experienced UFO researcher knows that it is easy to spot a case that is likely to remain unexplained (excluding the trivial types that are simply poor reports and contain little descriptive material) on the basis of its general resemblance to other unexplained cases, and its clear differences from cases that are resolved eventually. Thus it is not true that unexplained reports are simply less well defined than, but similar to, explained cases. In fact, the reverse is more likely to be true; cases that are not simply shelved as being too sparse in information, and that are admitted to the ranks of "real" (that is, startling) UFO's, are so admitted because they are generally *more* complete and contain *clearer* descriptions than most explained cases. Therefore it is unlikely, not likely, that additional information would lead to an ordinary explanation of a UFO. Of course, it does happen sometimes that continued effort to solve a case results in a good and acceptable explanation, but that is a rare exception. Some cases, like the Lakenheath Case in the Condon Report (Case 2), are so well witnessed and reported that one would hardly know what kind of additional information could be obtained that would lessen our bafflement.

Of course, it would be desirable to get better reports and to obtain scientific observations rather than anecdotes. The nature of most UFO reports is

Now...quality data...



**...in less time
...in less space
...for less money**

If your work demands quality data with minimum time and effort, see what the GEOS 8040/7010 System can do for you. This moderately-priced system offers the high standards of performance and utility required for *effective application* in high resolution nuclear spectroscopy.

Model 7010

is a digital processing, display, and input/output unit with a 1024 channel parallel BCD memory of 10^6 count capacity. It features a built-in cathode-ray-tube display, yet occupies less than 2 cu. ft. A square flat-faced cathode ray tube measuring 3" x 3" provides the useful viewing area of a round 5" cathode ray tube. PLUS: PHA and Multiscaling modes, direct compatibility with most commonly used read-in/readout devices, and continuous channel band selection for display expansion, readout and read-in.

For more information write or phone:
GEOS SYSTEMS TECHNOLOGY DIVISION
Geoscience Instruments Corp., Hamden, Conn. 06518
phone: 203/288-5651. Request Data File 78E.

Model 8040

is a compact 4096 channel analog-to-digital converter with a 50MHz digitizing rate. It's packaged in an AEC standard NIM configuration of three module widths to enable bin mounting with amplifiers and other instrument modules. The 8040 is directly compatible with the GEOS 4096 Channel Digital Processor and Two-Parameter Input/Display Unit. Stability, linearity and channel profile are excellent, of course.



Get involved

Take part in
a demonstration of
our 512/1024 Multichannel
Analyzer Systems.

And see what we mean when we say
we're committed to uncompromising
instrumentation excellence.

Don't take the day off. We'll bring the
demonstration right into your own laboratory.

All we'll need is about four square feet
of bench-space and access to some
of your ac voltage.

After we plug the analyzer in, you can
do your own thing. So you can see for yourself
how this system makes short work of the
rising tide of experimental data.

Are you ready for change?



O-213

Nuclear-Chicago, 2000 Nuclear Drive, Des Plaines, Illinois 60018

GENTLEMEN:

- ☐ Yes, I want to get involved (without obligation). Please get in touch with me to schedule a demonstration of your 512/1024 analyzer.
- ☐ I'd like to check your specs first—to make sure you meet some of our special requirements. Just send me some technical literature on your 512/1024 analyzer.
- ☐ I hear you manufacture a 4096-channel analyzer. Good work! Send me some specs on that too.
- ☐ Include something about your NIM Research Modules.

Name _____ Title _____

Organization _____

Address _____

City _____ State _____ Zip _____

Telephone _____

Pre-Demonstration Checkout.

For those of you who wish to check our credentials before participating, here follows a brief review of the 512/1024's salient features, benefits, and qualifications:

Choice of two analyzer systems: 512 or 1024 Channel.

Field expandable: 512 system may be upgraded to 1024 channels at any time by adding a single plug-in board.

Compact system, self contained, less than 2½ ft.² bench space and less than 3 ft.³ volume (excluding detector and readout).

Built-in active filter or wide band, pole zero compensated linear amplifier.

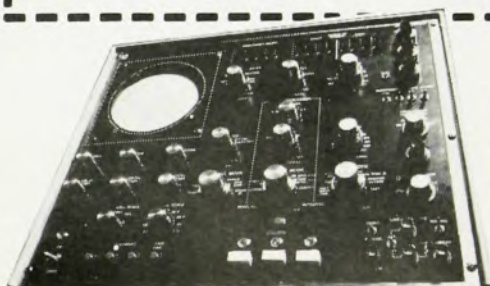
Built-in data processor provides curve/peak integration and spectrum resolving for versatile data manipulation and reduction.

Full digital Region-of-Interest selection is provided for data display intensification, read-in/out and data processing.

Built-in four input mixer/router for multiple input pulse height analysis or multi-scaling.

Built-in 5" CRT display permits live, visual memory display during PHA data accumulation even at low input rates.

Basic design simplicity coupled with extensive use of silicon T²L integrated circuitry provides outstanding reliability in a compact package.



NUCLEAR-CHICAGO

A SUBSIDIARY OF G. D. SEARLE & CO.

2000 Nuclear Drive, Des Plaines, Illinois 60018, U.S.A.
Donker Curtiusstraat 7, Amsterdam W. The Netherlands
APS-297

such that one is never really satisfied that he understands exactly what the witness experienced, and certainly the subject matter of a good UFO report leaves one tantalized. But I am not arguing here that we should take such reports at face value, or cease to try to understand them in familiar terms where that can be justified; I am only pointing out that there seem to be generic differences between good UFO reports and reports that eventually lead to factual explanation. If that is really true, and I highly recommend an organized study to see if it is, then there is no justification for behaving like the new bank teller counting money: "One hundred, two hundred, three hundred—well, it's all right so far, it must be all right the rest of the way."

W. T. POWERS
Northwestern University

Definition of physics

In a recent article (January, page 27) H. William Koch discussed some current trends toward modifications of physics. I compliment Koch on a very complete and informative account of this very important subject. Here I want to comment further on some of his discussion under the heading, "The Definition of Physics."

I do not disagree with the authenticity of Koch's remark regarding the present-day attitudes of physicists. However, I was alarmed when faced with some of the implications of these attitudes. Perhaps the definition of physics can best be summarized, according to Koch's article, by his statement that "physics at any given time is defined by what physicists are doing and are communicating at their meetings and in their journals."

I take issue with this definition for it makes the science of physics appear as an ambiguous topic of study, subject to any change at all. Suppose, for example, that the present-day leaders in physics, and the bulk of their following, should decide to spend 90% of their time and publication space on questions dealing with social problems, or problems dealing with air pollution, and so on. Important as these problems may be, I would not then say that social problems or problems dealing with air pollution are physics problems. I would rather say that many physicists have changed

their field of interest from physics to sociology, or to something else. Indeed, this added effort may be a good thing for the present social or health problems that are plaguing the world's population. But at the same time, it would tend to choke off the true aim of physics itself—which, I feel, is based on an objective investigation of the conceptual basis (the "laws of nature") that underlie the material universe.

My second point is a disagreement that physics, per se, has anything to do with a consensus of opinion—unless, of course, all those who form the opinions are totally objective individuals in matters of science (a situation that has never happened in the history of science). For example, when the consensus of opinion in Galileo's day supported the geocentric model of the universe, and when his peers refused to look through Galileo's telescope as he tried to show them the moons of Jupiter, were his peers practicing the science of physics, and was Galileo himself a crank? I would contend that physics (as one of the sciences) is based on a methodology of objective reasoning and experimentation, quite independent of the number of personal opinions of people who agree or do not agree with one approach or another. In Galileo's own words, "In matters of science, the authority of many is not worth the humble reasoning of a single individual."

At the present stage of physics, I am concerned that (along with the obvious advantages) too much organization induces some very bad effects. In my opinion, the essence of physics (or any intellectual pursuit) is like a rare flower that must be treated delicately, rather than burying it under heaps of fertilizer, in order to ensure its survival. I think that if physics is to flourish we must make special efforts to encourage and to ensure a true freedom of inquiry and a true freedom of communication—independent of the consensus that happens to be in fashion! And we must be as objective as is humanly possible in evaluating these studies. For, it seems to me, there is unfortunately an inverse proportionality between the degree to which these freedoms can be ensured and the amount of structure and organization that is utilized in running the business of physics. Perhaps what I am advocating here is (as strongly opposed as I am to anarchy in the social aspects of society) that

Vibration Isolation Table uses air suspension

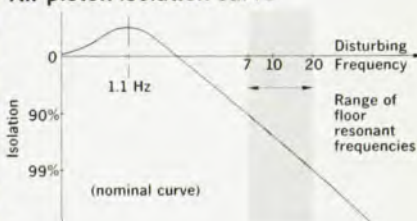


70.401
Vibration
Isolation
Table

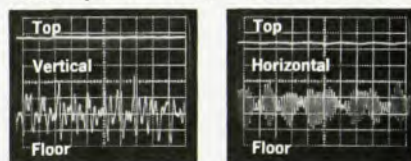
Features

- ☐ 1.1 Hz resonant frequency with air piston system
- ☐ Stiff, portable honeycomb top is 12' long
- ☐ Only system available for effective isolation of both vertical and horizontal vibrations
- ☐ Steel and granite tops available
- ☐ Automatic self-leveling with servo valves

Air piston isolation curve



Actual performance measurements



Vertical and horizontal isolation performance monitored with seismometers.

Specifications

Model	Capacity	Resonant Frequency	Price Incl. Top
70.401	950 lbs.	1.1 Hz.	\$2570
70.402	1950 lbs.	1.4 Hz.	2570
70.403	2800 lbs.	1.7 Hz.	2570

We will be happy to send you complete Vibration Isolation Table information. Fill in this form and mail it today—or call us at 607-272-3265.

Lansing Research Corporation,
705 Willow Avenue, Ithaca, N. Y. 14850.

☐ Please send complete catalog. (7)

Name _____
Dept. or MS _____
Company _____
Street _____
State _____
City _____ ZIP _____

Lansing