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## 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.



## LETTERS

footnote of the book's conclusion. The footnote gives a totally incorrect interpretation of the physical meaning of  $P$ -invariance.

ROBERT G. SACHS  
*The Enrico Fermi Institute*

### Citing the literature

In his letter (PHYSICS TODAY, Oct. 1969, page 11) Peter Borchers calls attention to the problem of referring to unpublished work and notes that such references waste the reader's time. I would add that this is but one instance of the difficulties imposed upon the reader by the method of citing references in use by the journals that he mentions (*The Physical Review*, *Physical Review Letters*, and *Journal of Applied Physics*).

A much preferable way of dealing with all references is to cite them by author and date of publication and to list them alphabetically at the end of the paper. Most scientists, reading a paper in a field with which they are familiar, will recognize many papers by authors and date and will not need to interrupt their reading to look up each reference. This method can also lead to an improved writing style, because it is natural to use the authors being cited as the subject of an active verb: for example, "Smith and Jones (1965) have measured . . ."

Another dividend is that it is easy, by looking at the alphabetized bibliography, to find out if any particular reference has been included or omitted in a paper. This method of citing references is, of course, widely used in US astronomical literature (for example, *Astrophysical J*, *Astronomical J*).

By adopting the policy of citing papers by author and date, scientific journals improve their readability. The problem noted by Borchers is easily solved within this framework by references in the text of the three following forms: (Smith and Jones, to be published); (Smith and Jones, in preparation); and (Smith and Jones, private communication).

DAVID MORRISON  
*University of Hawaii*

### Has science overwhelmed society?

I should like to protest the superficial and self-serving optimism of your guest editorial in the December issue, entitled "Is Your Research Moral?" I



do not question the usefulness of physics to society, which is defended in the editorial. Indeed, this is precisely the point—science has been too useful. Technological change is now overwhelming the capacity of society to adapt. For example, the editorial points to cardiac pacemakers as one of the beneficial applications of transistors at a time when we are rapidly becoming aware that the control of death has created the most difficult problem ever to face human kind. Does anyone seriously believe that the resources exist to support the entire population of the world at the technological level of the US?

David Inglis has described science as a gourmet feast spread before us on a table whose end we cannot see; we, he says, are gourmandizing. The question is not one of sacrificing scientific research for the short-range benefit of immediate social gains and thus mortgaging our future, as your editorial puts it; it is rather one of postponing some of our research to the future in the hope that society may have a future. Or do we feel that we must accumulate as much scientific knowledge as possible to clutch to our bosoms as we sink in the ultimate catastrophe?

The future of scientific research really depends upon there being *some* scientists to carry on the tradition; their numbers are unimportant. Though there is certainly research that needs to be done, even in the golden age scientists chose between problems. I suggest that for a few years at least we ought to guide our choices toward the research that has a stabilizing rather than a destabilizing effect upon society, and even award our academic honors and our Nobel prizes in the same way.

BRUCE HAWKINS  
Smith College

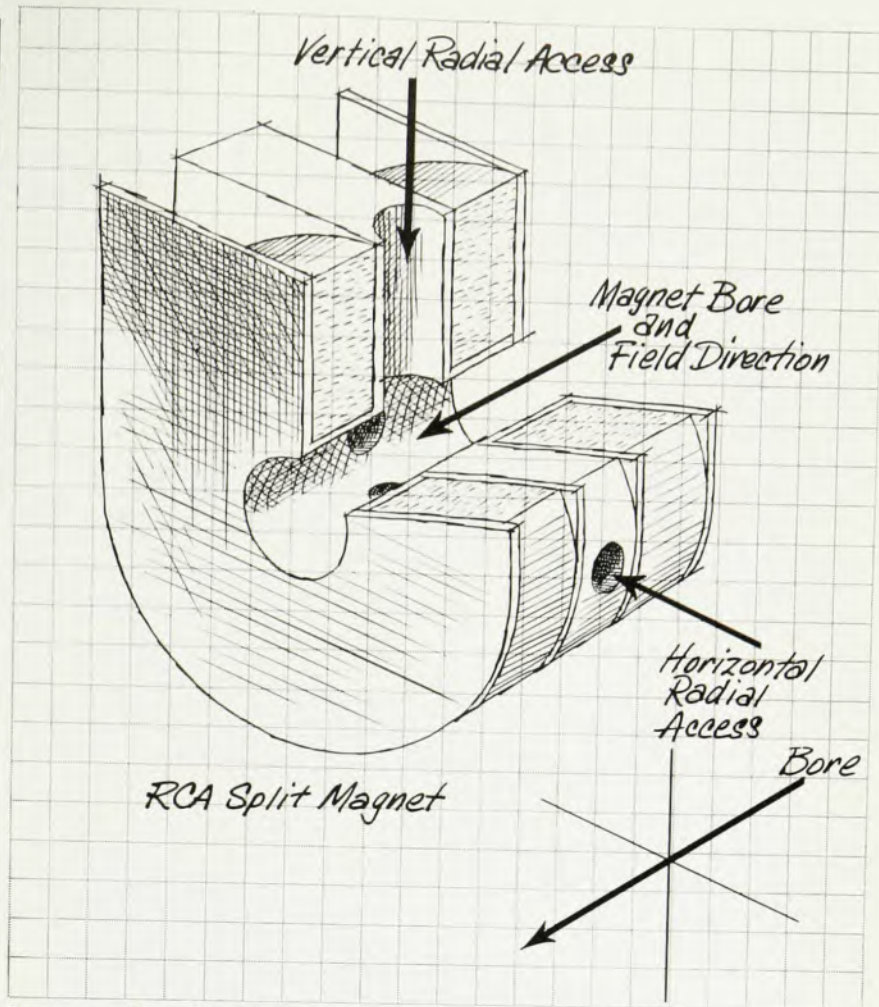
### Tachyons

I considered the superlight region by associating relativity theory with thermo-fluid-dynamics by means of the first law of thermodynamics. Doubtless Bilaniuk and Sudarshan's approach (May 1969) is superior.

### References

M. Z. v. Krzywoblocki, *Acta Physica Austriaca* 13 no. 4, 381 (1960); 14 no. 1, 22 and 39 (1961); 14 no. 2, 239 (1961); 15 no. 3, 201 and 251 (1962); 15 no. 4, 320 (1962), and 24 no. 4, 291 (1966).

M. Z. v. KRZYWOBLOCKI  
Michigan State University □



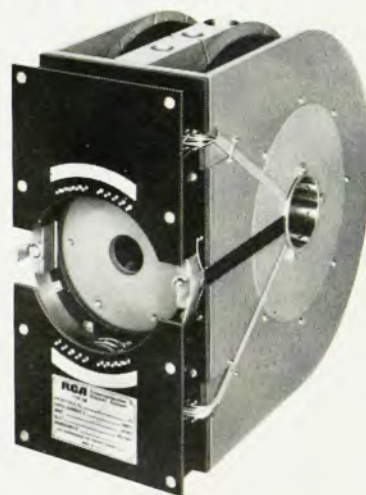
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