

terial that physicists should take less for granted and that area is physics education. What could be of more importance to the production of physicists than the analysis and review of the methods for teaching the techniques of measurement of the fundamental constants, for example? If these areas of physics training are used for the master's degree, the individual who does the thesis has made some steps toward his PhD research work, and he may feel that he has made a contribution to the field of physics as well.

I agree with Brindley that the master's-degree candidate should critically examine his abilities after the master's degree is completed and before he has invested much time in a PhD problem. If the master's degree itself is a contribution to physics, there is no need for one who terminates his work at the master's degree to look on his degree as a consolation prize for failing to qualify as a PhD candidate. As Brindley notes, this view does, indeed, depreciate the academic currency and is detrimental to all.

Perhaps these suggestions will be useful to those who spend a major portion of their time directing master's-degree students and will give some discouragement to those who would use the master's-degree candidate selfishly as a sounding board for potential PhD problems.

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Nagaoka to Rutherford

I receive your magazine *PHYSICS TODAY* through my membership in the Optical Society of America. I always read it with interest. The article "Nagaoka to Rutherford, 22 February 1911" by Lawrence Badash in the April issue (pages 55-60) especially interests me because I have known personally several of the physicists named therein:

Alexander Pflueger, former professor of theoretical physics at Bonn University, was one of my examiners in the oral doctor's examination in 1932. Later I worked in a group which, under the direction of Geheimrat

Heinrich Kayser, emeritus professor of physics, prepared a new edition of his handbook on spectroscopy.

The principal inspiration for my letter, however, was your entry "Clemens Schaefer (1878-???)?" on page 57. Prof. Dr. phil. Dr. phil. nat. hc Schaefer lives in Köln-Marienburg, at Mehlemer Str. 21. After the last war he still held a lectureship at Cologne University, and was named Honorary Member of the German Association for Applied Optics. On the occasion of a visit by Ludwig Bergmann (in the Leitz Works in Wetzlar) I also met Schaefer personally, after his various textbooks had helped me a great deal as a student. Through our discussions (about 1957) he showed himself an expert in optical literature, and also in my special subject—technical optics.

Ernst Gehrcke who, after the war, worked for the German Office for Weights and Measures in East Berlin, frequently visited our optical colloquium here in Charlottenburg, after I had acquired my professorship here in 1952. He still participated very actively with his own lectures, so that we were surprised, despite his great age, by his death.

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Who has seen the clouds?

I refer to the paper in the February *PHYSICS TODAY* by J. Wesley Simpson on "Dust Cloud Moons of the Earth" and subsequent correspondence in the May 1967 issue. Simpson, particularly in the May letter, makes statements that imply NASA agreement with his interpretation of the NASA CV-990 flight data.

We wish to make clear that Simpson speaks only for himself, and we want to disassociate NASA completely from his opinions. In particular, there is no reason to believe that the observers on R. G. Roosen's team were in any way less competent than those aboard the NASA aircraft.

Photographic records obtained by the NASA scientists on the flight were analyzed densitometrically and failed to reveal any dust clouds; a brightness of 5% above sky background would have been detected. A paper describ-

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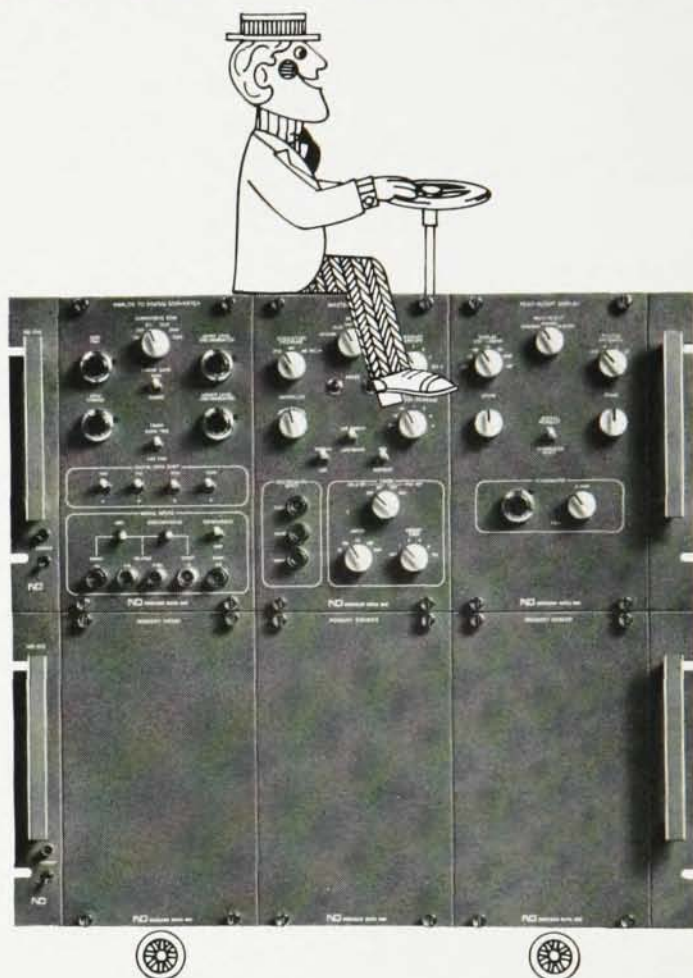
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ing the NASA data in detail has been prepared for publication in another journal.¹ These results are consistent with the visual observations reported by W. H. Allen, W. J. Krumm and R. J. Randle at the IAU Symposium last January.² The NASA visual observers used the word "luminosities" in recognition that no unequivocal evidence showed that the phenomena observed were indeed the libration-center clouds.

References

1. C. Wolff, L. Dunkelman, L. C. Haughney, "An Attempt to Photograph the Earth's Cloud Satellites from an Aircraft" *Science* (to be published).
2. W. H. Allen, W. J. Krumm, R. J. Randle, "Visual Observations of Lunar Libration Center Clouds." Paper presented at the International Astronomical Union Symposium on the Zodiacal Light and Interplanetary Medium, Honolulu (January 1967).

H. JULIAN ALLEN
Director

NASA Ames Research Center

Only nine megagauss

In the *PHYSICS TODAY* issue of May 1967, page 109, we were quoted as having generated 20 megagauss in our explosively driven flux-compression experiments at Frascati.

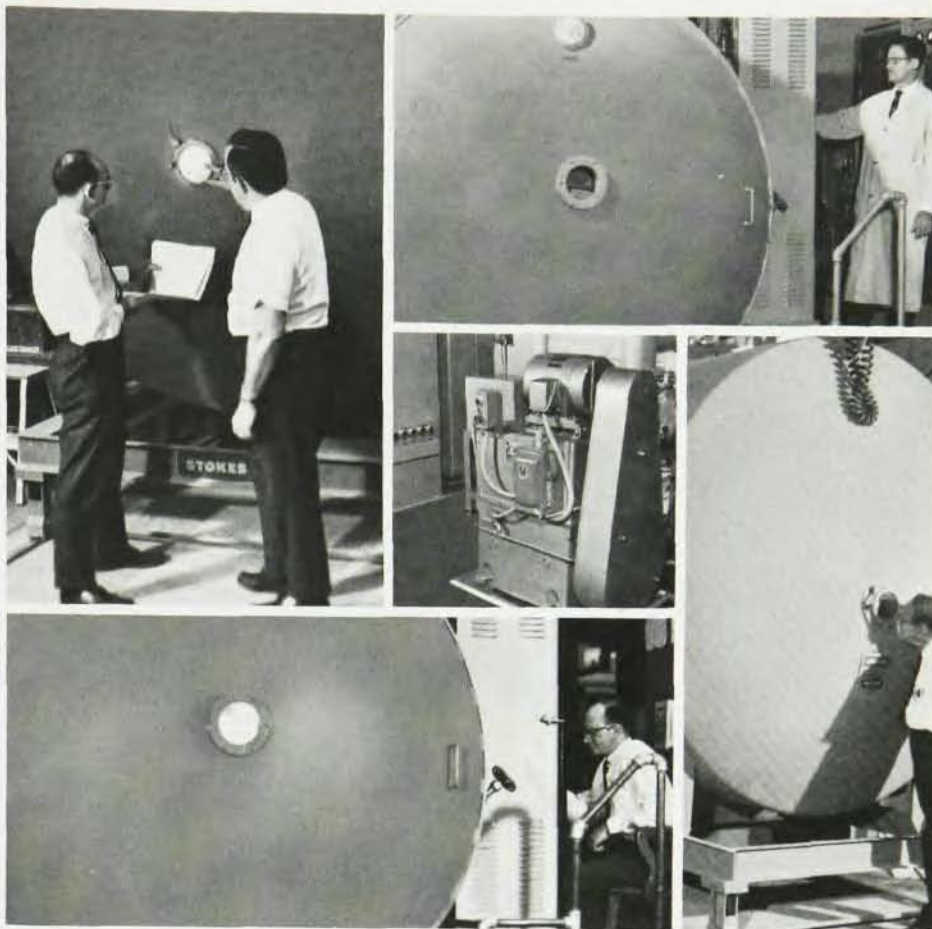
This information is incorrect, since we have never claimed to have produced more than 6 MG. Furthermore, I feel that somehow I am an unsuccessful lecturer since at the Grenoble Conference, whence this information comes, and in connection with the presentation of our invited paper, I spent about one third of my time trying to reduce the general optimism to reasonable megagauss levels.

At that conference we introduced and defined the concept of "reproducible" magnetic field generation and concluded that on such a basis an analysis of the scientifically documented and published data limits the maximum fields so far produced to about 9 MG.

H. KNOEPFEL

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