The procedure for obtaining a loan is for the scientist to write a letter to the undersigned outlining the research program contemplated, stating the minimum quantities needed, the purity required and in what form the materials will likely be returned. These applications will be considered once a month and the available supplies allocated. These allocations will be based on the principle that the material should be divided in such a way as to result in the maximum of good basic research. The AEC has asked, as part of the loan agreement, that the borrowing university or research institution pay a service charge of $5.00 to $25.00—depending on the value of the materials—for the costs of administration, and that they guarantee the out-of-pocket costs if anything happens to the materials. A second condition of the loan is that the scientific information obtained be made promptly available to the Ames Laboratory and that the results be published for the general welfare of the country. A third condition is that the materials be returned as promptly as possible since there is certain to be a waiting list.

Once the allocation has been made, the applicant will be notified and the necessary forms sent to make delivery. It is recognized that in certain types of experiments, there are inevitably bound to be small losses. If these are less than 10% and are reasonable losses for the type of experiment involved, such losses will be considered part of the loan agreement. On the other hand, there are certain experiments where the material has to be used up, and, if these are important enough, we will try to make the materials available on an out-of-pocket cost basis, where the institution will be charged only the cost of producing them.

It should be mentioned that the granting of such requests for the elements samarium and below is much more likely than for the rare earths heavier than samarium, since these materials can be replaced with much less labor than the heavier rare earths. Some of the scarcer heavy rare earth elements are very expensive to purify and may cost as much as a few hundred dollars a gram.

It is hoped that as time goes on the quantities in this loan collection will be increased, but in the meantime we would like the scientists to bear with us in that the requests will far exceed the supply and that it will be impossible to supply everyone promptly or even to fulfill many of the requests.

It would appear from the present indications that the rare earths are going to become important commercially in the near future on a much vaster scope than at present. A number of companies are at present producing particular rare earths in various grades of purity. We will send out, with each request, a list of companies which we know are producing rare earths and we urge that where their supplies are adequate the rare earths be obtained from them. We would be glad to add the names of any companies which have rare earths for sale to this list, if they so request. It should be emphasized, however, that this information is supplied solely for the benefit of the scientist and that we make no claims as to the purity or availability of the rare earths from any of these sources.

This loan collection at present is only available to American institutions which agree to make public their findings. If foreign requests are to be made, they will still have to be made through the Atomic Energy Commission in Washington although it is always wise to write us first to see if the materials are available.

Frank H. Spedding,
Director, Institute for Atomic Research and Ames Laboratory
Iowa State College

Size of the Universe

YOUR February issue (page 25) contained a report of a discovery that is causing much interest in the astronomical world just now; namely that the Universe is about twice as large as we formerly believed. It was a matter of some surprise to me to notice that your correspondent omitted all mention of the outstanding part that Dr. Walter Baade of the Mt. Wilson and Palomar Observatories has played in the making of this discovery.

For some time past it has been known that a discrepancy existed between the different methods that astronomers use for measuring distances. Just where this discrepancy lay was quite uncertain, however, until the work of Baade and Sandage established beyond all cavil that former estimates of the scale of the Universe were in error by a serious margin.

I mention this matter, because as acting secretary of the Commission for the study of extragalactic nebulae I well remember how, as long ago as last September, Dr. Baade announced his results to the International Astronomical Union; and I well remember how his announcement was acclaimed by astronomers of all nationalities.

Fred Hoyle
University of Cambridge, England

The oversight was not intentional. It is of interest to note that on April 12th Dr. Baade reported that the Palomar results have been strikingly confirmed in a study of the southern sky by A. D. Thackeray of the Radliffe Observatory at Pretoria, South Africa, who has found good evidence for the revised distance scale from observations of cluster-type variables in the Small Magellanic Cloud, an extragalactic nebula visible only in the southern hemisphere. Further corroboration has been provided by H. Mineur, director of the French Institute of Astrophysics, in a recent note to the French Academy.—Ed.