

## LETTERS

### Origin of Red Shifts

I write to raise an important point omitted from Vera Rubin's article "Stars, galaxies, cosmos: The past decade, the next decade" in the Centennial issue of 4 July 1980 (p. 64). Like most of her colleagues, Rubin, in discussing quasars, manages to ignore any mention of the remarkable results obtained over the last decade or more by Halton Arp and others which by now provide strong evidence that not all red shifts are of cosmological origin. If this evidence is presented to any gathering of scientists who are not astronomers, as I have done on a number of occasions, it is accepted without any real debate. But among the professionals, it is largely ignored. Why? Perhaps because we have no physical theory which will explain the phenomenon, and this is not treated as a challenge but by many as an objection to the evidence. Perhaps because astronomers knowing that their subject in this area already rests on rather shaky foundations as far as hard-proven evidence is concerned, cannot face up to the opening of Pandora's box in extragalactic astronomy. Perhaps, because they are so wedded to present ideas. For example Rubin's statement "Quasars were more numerous and more luminous in the past" rests completely on the cosmological presumption concerning the nature of the red shifts.

Rubin states, "most astronomers agree that there are no compelling reasons to doubt that the observed red shifts indicate enormous distances or to believe that 'new physics' is required to understand quasars." However the evidence is there, and if we are really searching for the truth, we ignore it at our intellectual peril.

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### Balloon Surgery

I read with interest Gina Bari Kolata's article (Research News, 10 July, p. 195) on a recent workshop on percutaneous transluminal coronary angioplasty (PTCA). PTCA is truly one of the most exciting accomplishments in modern medical technology. I agree with most of the workshop participants that before PTCA spreads "like wildfire" (to quote Katherine Detre of the University of

Pittsburgh), a clinical trial should be carried out. However, Friedewald of the National Heart, Lung and Blood Institute is quoted as being opposed to the idea because "possible end points [for a trial], such as quality of life, exercise tolerance, and blood flow to the heart are too subjective and easily disputed." Although the quality of life may be a subjective matter, there is certainly nothing subjective about exercise testing, using either electrocardiography or radionuclide imaging, or about assessing blood flow to the heart, using either thallium-201 myocardial scintigraphy or selective coronary arteriography.

I wholeheartedly agree with Paul Meier of the University of Chicago that, "If we don't do some sort of clinical trial, it is not as though the problem will take care of itself," and with his question, "If we don't do the trial, what will we do instead?" My answer is that, if we don't do the trial with PTCA, we will be making the same mistake that occurred when coronary artery bypass graft surgery (CABGS) came into use more than a decade ago. There was no clinical trial with CABGS at its outset, and it became widespread before its usefulness and criteria for application had become established.

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### Indirect Costs

Bravo for Kenneth T. Brown's article (24 Apr., p. 411) on overhead! In particular, I would like to support his proposals that this tax on research—and that is what it is—be made uniform among various institutions and reduced on the average.

It is true, as he says, that the higher the overhead tax, the less money is available for research. That is, perhaps, the main point.

But allow me to point to some other unfortunate consequences of the currently excessive level of the overhead tax. In my view, it makes the universities so dependent upon federal research grants that the ability to raise such funds becomes too large a factor in hiring and promotion decisions. In particular, this consideration seems to dominate decisions as to the mix of fields or subdisciplines among the faculty. This, in turn, inevitably yields an excessive emphasis on the currently fashionable; with too little diversity, too little concern for the

past and too little concern for the future.

Moreover, a faculty hired in this way can contribute too little to teaching. So an excessive overhead tax ultimately yields an excessive separation of research from teaching; a separation that is as bad for research as it is for teaching.

Perhaps it is time for the universities to regain some of their independence by reducing the overhead tax.

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In these times of fiscal pressure on research budgets it is useful to examine critically all aspects of our expenditures as Brown has done with respect to indirect costs of federally supported research.

I must point out certain fallacious arguments in the article. Brown would allow a single, indirect rate for all universities and eliminate accountability to the government. However, this does not eliminate the requirements for accountability to various other parties such as the faculty itself, taxpayers, and trustees—groups that should be more critical than federal auditors. In addition, certain aspects of federal reporting, such as those associated with affirmative action programs, could probably not be negotiated away so easily.

A second, more serious defect of a uniform indirect rate is evident when Brown notes that the University of California has a low indirect rate resulting from a policy of charging as many costs as possible to the direct cost category. Thus able and energetic administrators would have a field day with a fixed, nonaccountable indirect rate. Brown would find himself paying for his parking space, telephone, library privileges—even the administrator's own salary.

There is a certain sociology of funding. Individuals, whether principal investigators or deans, will try to minimize their costs and maximize their available funds. Changing the boundary conditions simply changes the strategy slightly, and eliminating accountability provides a license for abuse of all kinds.

There is a central issue: namely, how shall basic research be funded? Although Brown rejects the idea that no indirect costs be allowed, he does not fully discuss the extent to which the universities are now paying for research in the United States. These costs are substantial. At Harvard, as an example, they include, at a minimum, professorial salaries and a portion of the rent (since the rent charges do not normally include the payback of