

# CORRESPONDENCE

## British Optical Astronomy

SIR,—Dr Burbidge's highly personal account of his likes and dislikes in British astronomy provides the occasion for comment that may prove more constructive.

I have myself sometimes been critical of British astronomy, and can agree with some of Dr Burbidge's historical comments, although in my view the chief fault has been undue deference to the supposition (probably mistaken anyway) that a large "prestige" telescope was politically more acceptable than the diversity of an observing system optimized for cost-effectiveness. Although having reservations about site testing<sup>1</sup>, where Dr Burbidge criticizes the sites of British telescopes I would tend rather to question the design of the telescope itself. The Anglo-Australian Schmidt for example appears to be designed for survey work and to lack the accuracy needed in a production instrument, so far as can be surmised from the information publicly available.

Times have changed, however, and the new generation of British astronomers that has become influential in recent years is unlikely to repeat the old mistakes, which are now accordingly largely irrelevant. In common with all who try to do something creative, these astronomers will make new mistakes of their own which it will be the task of the next generation to correct. The conditions that led to the long delays in the Isaac Newton Telescope no longer prevail, and indeed some of the questionable decisions were more the responsibility of Government and Treasury policy at the time than the free choice of the astronomical establishment, however complacent or misguided it may have been.

Of course much in British optical astronomy is third rate, as is much in American astronomy or for that matter much of anything in any country. The normal criterion is to look at what stands out, and here British astronomy need have no fear of international comparisons. GALAXY<sup>2</sup> was developed for less than one-tenth of the probable cost of the 90-inch telescope alone in Dr Burbidge's proposals, and in a couple of years has about doubled the number of accurate positions and magnitudes ever measured in the history of astronomy. These data are giving new insight into the structure of our Galaxy; if it were not so, would not the failure be in the theoreticians? No basis is given for the assertion that

GALAXY has attracted no overseas interest, but I happen to know personally of firm enquiries from both Europe and the Americas. The Radial Velocity Photometer<sup>3</sup> has in a similar period enabled one man, working by himself from latitude 52° N and reducing his own data, nearly to double the number of first quality radial velocities known, including a programme of Southern stars. Multiplex Spectrometry<sup>4</sup> developed internationally from British origins, has provided spectra of Venus and Mars of higher quality than standard solar atlases. The Spectracon<sup>5</sup> has enhanced by several times the potential of every telescope in the world for some kinds of observation. Further examples will occur to others familiar with other aspects of British optical astronomy; but indeed apologists are not needed for what already speaks for itself.

Experience teaches that complex problems are seldom solved by pursuing a narrow "single goal", and Dr Burbidge's proposals would be suspect for this reason alone. It is moreover ironic that he proposes to copy the American large-reflector tradition, since the West Coast reflectors were developed from the "3-foot" Common reflector presented by Mr Crossley of Halifax to the University of California at the turn of the century. It is at least possible that British astronomers have by now seen beyond this "British, and hence unproven, astronomical innovation" and may wish to do something else.

It is odd also that Dr Burbidge questions qualifications in observational astronomy, while as a theoretician telling British observers and instrument scientists what they ought to do. Astronomical knowledge does not progress in this way, but by a two-way exchange in which observation and theory work together in posing and solving astronomical problems. The synthesis of more effective methods of observation requires mutual interaction in which instrument scientists, observers and theoreticians each contribute from their own knowledge and professional specialization. These developments flourish best when there is free, wide and open discussion, no pre-emption by decisions made behind closed doors, and when the scale of each project is not so large that it must try to please everyone and perhaps ends by pleasing no one.

For these reasons, Dr Burbidge's letter has encouraged me to believe that British optical astronomy is basically

healthy just because it is not committed to the particular approach which he favours.

Yours faithfully,

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<sup>1</sup> Fellgett, P. B., Cambridge Conference on Astrophysics, July 18–20, 1972, *Observatory* (in the press, 1972).

<sup>2</sup> Fellgett, P. B., *Optics Technology*, 61 (1970); Reddish, V. C., Cambridge Conference on Astrophysics, July 18–20, 1972, *Observatory* (in the press, 1972).

<sup>3</sup> Fellgett, P. B., *Optica Acta*, 2, 9 (1955); Griffin, R., *Astrophys J.*, 148, 465 (1967); *Mon. Not. Roy. Astron. Soc.*, 145, 163 (1968); 148, 211 (1970); 155, 1 (1971); 155, 499 (1971).

<sup>4</sup> Fellgett, P. B., Thesis, Univ. Cambridge (1951); *J. Phys. Radium*, 19, 187 (1958); Connes, P., *Optica Acta*, 4, 136 (1957); Connes, J., Connes, P., and Maillard, J. P., *Atlas des spectres dans le proche infrarouge de Venus, Mars, Jupiter and Saturne* (Editions de CNRS, Paris, 1969).

<sup>5</sup> McGee, J. D., McMullan, D., Bacik, H., and Oliver, M., *Adv. Electronics Electron Phys.*, 28A, 61 (1969).

## Refereeing and Editing

SIR,—Here is a suggestion for doing away with the refereeing and editing of papers in scientific journals, for reducing the time and cost of publication and for improving the general standard of presentation.

In principle, the idea would be to put at the disposal of an author in any one year a stated number of pages to publish anything he chooses with no refereeing and no editing. More accurately, the idea would be to credit an author with a number of pages and constrain him (or his institution) to do the refereeing and editing. The scheme could therefore be called ACRE (Author Credit, Refereeing and Editing).

In practice, ACRE could be initiated by the publishers (societies and firms) of several leading journals; afterwards other publishers would have to apply for admission to the scheme. Any practising scientist *S* could apply for a passbook. This would contain a list of all ACRE journals and *S* would enter 1, 2, 3 (say) against a selection of these, and there would be space for him to enter details of his publications over the past 3 years (say). He would send his passbook to the publishers of his selected journal number 1 (*J1*) who would enter the maximum number of pages they would allocate to *S* for the