

# Mt Wilson 100-inch telescope

SIR — Your article<sup>1</sup> referring to the closure of the 100-inch telescope at Mt Wilson Observatory cites some disparaging opinions of the value and usefulness of the telescope. We would like to present another point of view.

The 100-inch reflector, despite its age (it has been in service since 1917 and was for thirty years the largest telescope in the world), is one of the finest instruments in existence. The high optical quality of its mirrors enables it to take full advantage of the excellent seeing often enjoyed at Mt Wilson — an aspect of the site not remarked upon in the news note. Star images seen in the Mt Wilson telescope are not infrequently smaller and crisper than any we have seen in other telescopes. Substantial and successful efforts have been made in recent years to obtain first-class reflective coatings on the telescope's mirrors — not an easy thing to achieve on large surfaces. The sharpness of the images and the high transmission factor of the telescope combine to make the 100-inch an extremely potent instrument. Its advantages are especially apparent at the Coudé focus (the stationary focus at which particularly heavy or delicate equipment needs to be mounted). Not only is the reflective power of the mirrors good, but intelligent design has required only three successive mirrors in the optical train; more "modern" designs call for five (as in the Anglo-Australian telescope) or even seven (as in the Isaac Newton telescope), resulting in disastrous loss of efficiency.

Its auxiliary equipment is also of the highest class. The stellar spectrograph at the Coudé focus is superb. The data from some of the photographic spectrograms we have obtained with it have been presented as photometric "atlases" of the spectra of two representative stars<sup>2,3</sup>; in terms of spectral resolution, signal/noise and wavelength coverage these are the only works of their kind for any star apart from the Sun, despite the demand for many more such atlases.

There is no equipment on any telescope accessible through the Science and Engineering Research Council (SERC) that will enable spectra to be recorded with anything like the quality and detail available from the 100-inch Coudé spectrograph. In the past four years alone, we have made nine visits to California at SERC's expense to obtain spectroscopic material at the 100-inch. Coudé spectrographs comparable with that at Mt Wilson were planned for both the Anglo-Australian and Isaac Newton telescopes, but the former was cancelled when the design was complete and the latter is in a state of abeyance despite being half-built. It is most regrettable that there is not, and never has been, any provision for high-quality spectroscopy on SERC telescopes: a generation of astronomers has grown up in

this country without any opportunity to learn or to appreciate a large and important area of astronomical research. Whether observational work on extra-galactic objects is "more exciting", as your correspondent asserts, is a very subjective matter.

Your remarks about light pollution of the Mt Wilson site are only partly justified. We should point out that the notorious Los Angeles smog never affects night-time observing, since at night there is invariably a temperature inversion which places an effective lid on the smog bowl well below the level of the mountain. The sky, certainly, is not as dark as it is at a site remote from cities; but even at the best sites half of the observing time is similarly compromised by moonlight. Full moonlight is much brighter than the Los Angeles light pollution at Mt Wilson. Yet it has never been suggested that good telescopes should be shut down around full Moon; indeed, even "bright time" is in heavy demand, particularly since instrumental developments (some of them made at Mt Wilson) provided equipment which permits subtraction of the sky contribution from spectra contaminated by a bright sky.

In short, we wish to suggest that the 100-inch telescope is being closed not because of any shortcomings of its own, its site or its staff but because of financial stringency within the Carnegie Institution. It will be as amazing as it will be incomprehensible if organizations suffering from the acute shortage of observing time on good large telescopes do not see in the present predicament an opportunity to buy the use of a very effective facility for a very modest operating cost.

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1. Budiansky, S. *Nature* **310**, 88 (1984).
2. Griffin, R. F. *A Photometric Atlas of the Spectrum of Arcturus* (Cambridge Philosophical Society, Cambridge, 1968).
3. Griffin, R. & R. *A Photometric Atlas of the Spectrum of Procyon* (published by the authors, Cambridge, 1979).

## Kitt Peak

SIR — In your news item on the reorganization of Kitt Peak (*Nature* 12 July, p.88), you state incorrectly that Dr Geoffrey Burbidge and Dr Jack Zirker had been reappointed as directors of AURA's Kitt Peak National Observatory and the National Solar Observatory, respectively, for five-year terms in 1982. In fact, both contracts had been renewed only until such time as the proposed National Optical Astronomy Observatories (NOAO) reorganization took effect, without prejudice to either director's possible candidacy for the directorships of those divisions of NOAO. Incidentally, Dr Zirker did not apply for the

position as Associate Director of NOAO for the National Solar Observatory.

I find it disappointing that your article gives the impression that AURA invalidated its contracts with Burbidge and Zirker as observatory directors. Both understood the terms of their contract renewals. I feel it is particularly unfortunate that our international colleagues may have gotten the impression that there are clouds over the careers of these two fine astronomers, each of whom has made major contributions to astronomy as an observatory director, and who will no doubt continue to do so in pursuit of their individual research.

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## Basso continuo

SIR — The intriguing association between music and nucleic acid chemistry<sup>1</sup> may generate the need for new terminology. Perhaps nucleotide sequences should, from now on, be notated on the *base clef*.

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1. Hayashi, K. & Munakata, N. *Nature* **310**, 96 (1984).

## Jumping the gun

SIR — Restrictive editorial policies concerning the announcement of a scientific discovery in the popular press before formal publication, such as those embraced by John Maddox (*Nature*, 21 June, p.665), only inhibit the timely exchange of information between scientists and the public. *Physical Review Letters* should be applauded, not condemned, for its adoption of a liberal and enlightened policy.

Maddox seems to be unaware that the growing corps of increasingly qualified scientific journalists will, despite embargos and edicts from journals, ferret out stories through personal contacts, preprints and other means. His case for restricting advance announcements, to prevent misrepresentation of discoveries to the public, does not hold up. Even after formal publication, results can be misinterpreted or sensationalized.

It seems to me that the public has a proprietary right to know the results of research whenever it is conducted with public funds. This issue, in particular, needs testing in the courts. Restrictive policies such as those adopted by *Nature* will hasten the day that test comes about.

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