CORRESPONDENCE

Siding Spring

SIR,—In his letter (*Nature*, **239**, 117; 1972), Professor Geoffrey Burbidge raises a number of issues on most of which I would not presume to comment. His points 3 and 5, however, with the strong implication that Siding Spring Observatory is an "inferior site" do concern this school and should not be allowed to stand. In addition, his assertion that a thorough assessment of observing conditions was not undertaken in choosing the location of the new observatory is not correct. The facts of the situation are as follows.

In the mid-1950s it became apparent that the Mount Stromlo Observatory, 12 miles from Canberra, would begin to lose effectiveness as the city grew. The Australian National University's Department of Astronomy, at that time under Professor B. J. Bok, therefore initiated a programme to find a better site, preferably (for logistical reasons) close to Canberra. A second objective, without the qualification, was to seek the best possible site in Australia for a large telescope. A wide ranging, site-testing programme was initiated over the period 1958-64, a total of fifteen sites being considered. The staff involved at the Australian National University were Professor B. J. Bok and Drs A. R. Hogg, S. C. B. Gascoigne, A. Rodgers and B. Westerlund. Night time cloud cover led to elimination of eleven sites and four years of detailed testing yielded the information shown in Table 1.

Table 1 Results of Site-Testing

	Time usable completely photometric (%)	Time usable spectrophotometric (%)
Siding Spring Observatory (NSW)	43	63
Mt Serle (SA Flinders Range)	45	66
Mt Singleton (WA)	39	61
Mt Bingar (NSW)	44	65
Mt Stromlo Observatory (ACT)	27	48

In the event the university, after consideration of these data and other desirable features, chose to site its new observatory on Siding Spring Mountain. Since then the accuracy of the site assessment has been fully confirmed by seven years of operations at the observatory.

Later a local committee, comprising Drs R. Giovanelli (CSIRO), Harley Wood (NSW Government Astronomer), A. Rodgers (ANU) and W. C. Swinbank (CSIRO), who were given access to all the data, made the independent assessment that Siding Spring Observatory was as good a site as was available in Australia at which to build a large telescope. This committee recommended that, if such an instrument was built, it should be at Siding Spring.

Experience at Siding Spring Observatory shows the atmosphere above it to be very transparent, with a visual atmospheric extinction coefficient of some 0.16 magnitudes per unit air mass. The seeing is good—the Australian National University 40-inch telescope has produced plates showing images as small as 0.5 arc s diameter. This is a good deal better than our Mt Stromlo Observatory, which at least one experienced US observer has stated to be as good as Mt Wilson.

Although comparisons can be misleading, the evidence available to us is that the Siding Spring Observatory site has characteristics very similar to Kitt Peak National Observatory in Arizona, where a 150-inch telescope, also, is in course of erection.

Sites in northern Chile certainly have one major advantage over both Siding Spring Observatory and Kitt Peak National Observatory, in that the usable time appears to be in the range of 80–85% as compared with some 60%. Chilean sites, however, have some disadvantages. They are remote from centres of learning and technology, they lie in an earthquake zone, and costs of building and operating highly sophisticated equipment are high.

The Australian National University has been delighted to provide sites both for the SRC 48-inch Schmidt telescope and the Anglo-Australian 150-inch telescope at its Siding Spring Observatory.

We believe that work with these two first-class instruments, when they are completed, will make major contributions to astronomy in the future.

Yours faithfully,

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A Counter-homily

SIR,—On August 4, your leading article "Homilies for the Club of Rome" sounded off with "Earlier this year the organization which calls itself the Club of Rome achieved a notable publishing success . . .", thus putting the whole thing firmly on a commercial, return-on-capital basis. Now the organization which calls itself, and is, the Club of Rome is not just a bunch of eco-nuts or doomster-nuts. They are mainly people in positions in industry, banking and administration unlikely to be achieved by the soft-headed—Rectors or Vice-Chancellors of one or two Universities, Presidents of the Banque de Bruxelles and the Credit Lyonnais, Presidents or Chairmen of companies like Nippon Electric, Hitachi, Imperial Oil, and the Pulp and Paper Research Institute of Canada.

On the substance of what you adduce against the MIT simulation-model, Oerlemans, Tellings and de Vries (*Nature*, **238**, 251; 1972) point out that if you modify the MIT model by inserting an optimistic estimate of the effectiveness of discovery of new natural resources, the unfortunate effects of resource exhaustion would be averted. Boyd (*Science*, **177**, 516; 1972) shows that you can achieve an equally happy result if you insert a technology joker, which invents new methods (and, it is implied, delivers the goods on time) just enough to get over any sticky patches. All of which merely shows that the MIT model is a reasonably flexible system, capable of producing a coherent output when fed with a wide variety of inputs —whether garbage or not.

So what would I, as a member of the Club of Rome, bloody but unbowed under *Nature's* homilies, claim that the MIT team had contributed?

Not predictions of what will happen. They explicitly state that their results are not—repeat not—and they repeat it three or four times—predictions. It is really too obviously a setting up of straw men to criticize the outputs as though they were supposed to be forecasts of what will happen. The nearest they come to this is that they show what could happen if a set of trends, adjusted so that they at least fit the data from the last few decades, continue unmodified into the future. The catastrophes expressed in the MIT graphs are at least rationally conceivable; they are amongst the "possibles" we have to take into consideration.