

## In this issue

### Marginal lensing

The deflection of light by gravitational fields is a consequence of Einstein's general theory of relativity and was successfully tested for starlight passing close to the sun during the solar eclipse of May 1919. Nowadays the same phenomenon, on cosmological scales, is invoked not to test gravitation theory but infer the properties of foreground masses from their distorting effect on the images of background sources. After 1987, clusters of galaxies have attracted a lot of attention since they can act as gravitational 'lenses' and produce distorted images of distant galaxies.

The article by D. Narasimha (page 725) focuses on a particular class—the so-called marginal lenses—which might at first appear to be very special. By definition, one is dealing with a situation in which the rays deflected by the lens are about to or have just begun to cross when reaching the observer. However, many cases of cluster lensing are now known and the possibility of marginal lensing, with its special features, deserves investigation. In addition, the distribution of surface mass density (i.e. focusing power) may well be skewed towards smaller values, favouring marginal lens-

ing statistically. It may be mentioned that groups in India have made many contributions to both the theory and observation of gravitational lenses since their discovery in 1979.

### Conservation of our ancient paintings

In spite of the accusation of his being the ultimate imperialist, Lord Curzon was one of the greatest friends India had in one respect. He took steps to preserve our ancient heritage and monuments by promulgating the Preservation of Ancient Monuments Act. The present state of preservation of monuments, works of art and manuscripts in India, is in a miserable state. One has only to go round our temples to see the horrible state of the paintings, wooden and stone figures, etc. Worse still one cannot bear to witness what the well intentioned conservators are doing to some of our best works of art. Using unscientific methods they take steps that are irreversible and that too in such bad taste that one has to pray that we are saved from our conservationists. In the twenties some efforts were made to preserve the Ajanta paintings. The varnish that was put on them has deteriorated due to exposure to artificial search lights and camera flash-

lamps. One can see how much of the original brilliance we have lost by comparing the 'preserved' portions with those which have been left alone. A visit to Bhimbetka tells us the awful state these remarkable rock paintings are in, as also the depredation that the public can inflict in carving their names on these rock paintings. Many of the so-called professional conservators are seem to be quite ignorant. Some even thought of protecting and preserving the glory of the Taj Mahal using a thin layer of silicone oil, not knowing the physical properties of marble and why it glows even in star light. We have many conservators who have written very learned papers but who possibly have never worked with their hands on the objects that have to be conserved.

Conservation requires a knowledge of physics, chemistry, biology and in fact every one of the sciences, but when conserving paintings it is necessary that they have also expertise in art. We require armies of conservators who are trained by those who understand all these modern techniques and who can adapt these to Indian conditions. To revive interest in this field we publish on page 736 an unduly long article on conservation of mural paintings.

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