

## **Call for evidence: laser pointers**

### **Response from the Royal Astronomical Society**

This is the official response from the Royal Astronomical Society (RAS) to the call for evidence from the Department for Business, Energy and Industrial Strategy (BEIS). With more than 4,000 members (Fellows), the RAS represents many UK astronomers and geophysicists who use laser pointers in teaching, and more generally use lasers in other work.

Our membership also includes a large number of professional and amateur astronomers who carry out public engagement, and in some cases use laser pointers at public 'star parties' to point out objects in the night sky. In framing this submission, we have therefore consulted with both our governing Council and the Federation of Astronomical Societies, which represents many local amateur astronomy groups.

The impact of improperly used high-powered laser pointers on the human eye, and the risk they present to aircraft crews, is beyond our expertise, but we of course recognise the expert input in this area. Our response concentrates on those areas relevant to the Society: in teaching and public engagement.

2: How well do you think the current legislation is working? Is the current guidance on safe use of laser products sufficient?

The guidance from Public Health England is clear in setting out the risks, and acknowledges risks such as mislabelling on laser products purchased from Internet suppliers. The key issue is that consumers either by accident or design are able to obtain laser pens that have too high a power, and can then put themselves or others at risk through their use. Along with assembled laser devices, their (sometimes high-power) components are also available through sources such as eBay.

The consultation document implies that Trading Standards is the only body able to take action at the point of sale, and it seems reasonable that legislation should offer greater controls on both assembled laser pointers and their components.

4: Do you have any further evidence about the nature and misuse of laser pointers?

Fellows of the RAS, and the broader astronomy and geophysics community use lasers in research applications. A good example is Light Detection And Ranging (LiDAR), where pulsed lasers are deployed to measure elevations of land and sea, to make accurate 3D maps and observe changes in natural and artificial features. This though presents little risk, as the beam is pulsed or scanned across the target.

Laser pointers are used widely in teaching where they are pointed at presentations, and used in systems that advance electronic presentation slides by remote control. As stated in the introduction, lasers are also used to point at objects in the night sky in events such as 'star parties'.

The Society is not aware of any of its Fellows seeking to misuse lasers, and specifically laser pointers, in any of these settings. We would though condemn negligent and wilfully dangerous use without reservation.

5: What legitimate uses are there for high-powered laser pointers?

As the consultation document sets out, and as stated in the answer to question 5, laser pointers are used by our community for teaching where they are used for pointing at presentation slides, and also at star parties where lasers can indicate the direction to objects in the night sky. These are legitimate uses if the pointers are used in accordance with existing guidelines, including minimum training for all of their 'operators'.

12: Do you think a licensing system to control the sale and purchase of laser pointers would be effective?

The Society supports a licensing system of this type, with the proviso that such a safeguard does not prevent legitimate users, in teaching and research, from purchasing laser pointers with reasonable ease. Such a system could inhibit the manufacture and sale of wrongly classified pointers, and ensure more generally that pointers and their components are not sold to groups such as children. A sensible cut off for a licensing system is to ensure it is in place for lasers above class 2M i.e. the level above which there is a significant risk of eye injury.

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October 2017