

## On a recent experiment to detect advanced radiation

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## LETTER TO THE EDITOR

### On a recent experiment to detect advanced radiation

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**Abstract.** The weaknesses of the arguments used by Davies to invalidate an experiment proposed recently by Heron and Pegg to detect advanced radiation are pointed out.

Davies (1975) has concluded that an experiment proposed by Heron and Pegg (1974) cannot detect advanced radiation from a source for two reasons. The first is due to the absorption by the earth of the retarded radiation corresponding to the advanced radiation at the chopper. The second is an argument based on the second law of thermodynamics. The purpose of this note is to answer these criticisms.

Firstly, Davies completely neglects the action of the mirror at the end of the laser which serves as the source. With the laser pointed away from the earth, the retarded radiation which corresponds to the advanced radiation at the chopper is reflected back to the right in his figure 10, thereby avoiding earth absorption and making the experiment, in effect, an 'extraterrestrial' experiment.

The second argument against the experiment can be looked at in the following light. If the experiment does detect advanced radiation, not only the second law of thermodynamics will be violated, but also our whole concept of causality, just as it would had Partridge's (1973) experiment given a positive result. To argue against the experiment on the basis of thermodynamics is akin to arguing on the basis of parity conservation against an experiment to test violation of parity conservation. There are, however, other difficulties, of more consequence than these raised by Davies, which may or may not ensure a negative result to the experiment. These will be discussed in a later paper.

#### References

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