

de Sitter and the ether

After reading the letter by C. C. Busby and C. J. Busby (*EW + EW*, November 1989 p. 1084) one begins to wonder how much more experimental evidence is needed before Einstein's postulate about the constancy of light speed is overturned.

Can it be that the discovery of the de Sitter phantoms was what was behind a recent Leningrad conference on "The Problem of Space and Time in Modern Science" sponsored by the Academy of Science of the USSR? A report by one US participant in this event, published in the *Commercial Dispatch*, Columbus, Mississippi on April 6, 1989, indicated that it had been learned that earlier two scientists had been dismissed from the Pulkovo Observatory because they had discovered facts which contradicted Einstein. However, perestroika had opened doors and this conference had become a forum for expressing disagreement with Einstein's theory. Quoting from the report, "At least four of the representatives from Novosibirsk, Russia's 'atomic city', were stressing the idea of

going back to a more classic belief regarding relativity. During the conference the burning question was: Why did the scientific world decide to go with Einstein's theory?"

To add a third element to this de Sitter revolution against Einstein, I draw attention to some words at the end of a paper Binary stars from Three Viewpoints by P. Moon, D. E. Spencer and E. E. Moon, which has appeared in the latest issue of *Physics Essays* (vol. 2, pp. 275-287).

"This paper makes no attempt to analyse all the experiments that are generally regarded by physicists to be verifications of special and general relativity. It deals with a relatively modest question: Should all thought concerning the postulates on the velocity of light have ended with de Sitter's 1913 publications? Many experiments do exist that are not consistent with the special and general theories of relativity. It is because of these experiments that the authors feel it is still worthwhile to investigate the postulates of currently accepted physics with an open mind."

The authors declare that the object of this latter paper is to prepare the way for a new interpretation or postulate on

the velocity of light which is consistent with the existence of 'universal time', something that is anathema to the relativist.

The institutional addresses of the authors raising these issues are Massachusetts Institute of Technology and the University of Connecticut in the USA, Kings College, Cambridge in the UK and Pulkovo Observatory, Leningrad, USSR. In the light of views expressed from such a background, I suspect we are now witnessing the crumbling foundations of Einstein's theory and cannot continue much longer to regard those who challenge the Einstein doctrine as ill-informed 'cranks'.
H. Aspden,
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University of Southampton.

ELF reception

Mr McGregor's letter describing a novel satellite antenna using gnomes' hats (November, 1989) reminded me of an idea I had a while ago. I was going to file a patent application, but I have not got around to it, and may as well share the information.

The central 'stick' on a sundial is called a gnomon (hence the connection with gnomes). For a given orientation of a sundial, the tip of the shadow traces out a path such that each unique position of the sun in the sky corresponds to a unique position of the shadow. By inscribing sets of orthogonal lines on the base of the sundial it would be possible to read off the sun's elevation and azimuth. Alternatively, if the sun's position is known in advance (from nautical tables for example), then the orientation of the sundial can be worked out.

A sundial could be constructed from a satellite dish. The dish is moved to a point in the required direction by watching the position of the shadow cast by the gnomon, taking into account the time of day, time of year and latitude. This information could be inscribed on the dish, but the system would be more versatile if the information was kept in a set of tables.

Those who can think in three-dimensional geometry will

realise that a 'degree of freedom' has to be constrained. The easiest way to do this is to fix the dial vertically (or for a dish, fix the elevation) and then to rotate the dial about a vertical axis. Another possibility may be for the dish to be on a polar mount.

Anyone embarking on such a design is warned that, although the three-dimensional geometry is not difficult, it is an onerous task to calculate the position of the sun accurately. It is done by iterative methods from knowledge of the earth's orbit. The best method, however, is to use someone else's tables!

This method is an extension to the practice of observing the sun at a certain time and date when it is eclipsed by the satellite, in order to see if you have a line-of-sight path to the satellite.

David Gibson
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Crossed-field antenna

As a final-year electrical engineering student at the University of Sydney doing my thesis on antennae, I was fascinated by your article on the crossed-field antenna. The idea of an antenna whose radiated wavelength is independent of physical size would be, as the authors suggested, unprecedented. Thus I spent several months on experimentation and theoretical study of the concept of the CFA.

At the end of this examination the conclusion I arrived at was that this antenna would not produce efficient radiation at a wavelength independent of physical size. The major problems associated with this design are as follows.

1. In Fig. 6 of the article, the wires connecting to the upper E-plate and upper D-plate from the splitter and phasing unit would interact with the other 'open' wires as well as the other capacitor plates. This would lead to the generation of both E and H fields, thus significantly distorting the 'synthesis' of the Poynting vector $S = E \times H$.

2. This running of the coax

Nonsense – but which nonsense?

As I survey the disordered criss-cross of narrow-gauge automatons, what do I find? A contents page containing a descriptive summary of Letters including the word "Nonsense".

Could this be a Freudian slip? To a metaphysicist who actually understands causation, all other explanations of what goes on in the "real" world of apparency, below it, are nonsensical.

Thus, Sir, before you label sense as nonsense, pray consider doing better than a certain professor of physics, with whom I have corresponded, who muttered blithely about answering all my points when he would have done better to demonstrate a mental ability to

integrate rather than demonstrate that he could not see the Garden for all the other dead slugs*.

It is in fact refreshing to read the print-out of a better-programmed computer like Mr Whiston (November), and that is why I grant you the benefit of the doubt as to why you published it if it is nonsense: or were you really referring to the object of his critique?

**Slug: a solid line of type cast by linotype process, largely defunct.*

James A. MacHarg
Wooler
Northumberland

I refuse to print this arrant nonsense – Ed.