

News from the universe

'Map Reveals Strange Cosmos', 'Dust Found from Other Stars', 'Double Whammy Created Moon', 'Universe to Expand Forever', 'Doomed Planet Orbits Star', 'New Moons for Neptune', the list goes on and on. New discoveries beyond the atmosphere of our own blue-green planet seem to pop-up every day or so. By the time you read this Jupiter may have more than 47 moons!

As a physics teacher you are unlikely to have any formal training in astronomy from your university days and you probably haven't had a chance to go on any astronomy courses since you started teaching. So can you teach one of the most complex, exciting and ever changing subjects in the curriculum? *Physics Education* is here to help!

I suspect that we all ask the same questions, regardless of race, creed or colour: 'What is really out there?', 'Are we alone?', 'How big is the universe?' and 'Where did it all come from?' Likewise it is these types of questions that fascinate our students. We find the whole idea of exploring space tremendously interesting and we have to remind ourselves that even though there are many images of deep space objects no human has ever travelled beyond the Moon, a mere 384 000 km into space.

On the whole, students seem to like studying space. Looking at the wonderment in their faces makes it a nice topic to teach. But how do you keep up with the ever changing body of knowledge that makes up astronomy? The simple answer would seem to be that you can't. It is virtually impossible to be aware of all the everyday changes in knowledge in this area. However, many subjects at school level seem to have a central core of 'facts' that have remained the same for many years. This is not quite so true of astronomy.



David Bowdley

How many moons has Saturn? Probably best not to answer that until you have looked it up on the Internet. The answer might have changed since yesterday.

In astronomy and planetary science even the core information has changed in recent years. How many planets are there in the solar system? You may answer nine, but there is a growing acceptance that perhaps Pluto is just a large member of the Kuiper belt. Whilst it is still officially a planet this may not always be the case. How many moons has Saturn? Probably best not to answer that until you have looked it up on the Internet. The answer might have changed since yesterday. Will an asteroid hit the Earth causing mass extinction during our lifetimes? Asteroids are a very hot topic with governments at the moment. Is the Big Bang really the start of everything? Will the universe collapse in on itself? All of these seem to have regularly changing answers and, at the very least, different interpretations of the 'facts'.

In this issue of *Physics Education* you will find a series of articles that have been chosen to give you the latest that is understood about some of the most popular topics that appear in the school science curriculum. Commissioning and editing these articles was not easy. There are so many relevant and exciting areas that are under development.

We have tried to assemble a series of articles that update you: from impact hazards at home to the dark energy that is causing the furthest reaches of space to accelerate away. We also feature articles to update you on the opportunities for practical observing from the comfort of your own classroom. Remote access astronomy seems to be taking off in a big way. We also hope that these articles will help you answer some of those awkward questions that you get when a *Star Trek* fan in your class asks about the planets around other stars.

David Bowdley