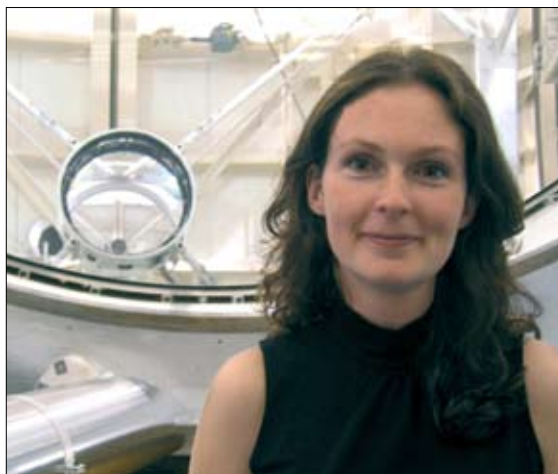


Lucie Green – astronomer

An image of the Sun's surface, made by the Hinode spacecraft. The Sun's magnetic field is revealed rising out of a sunspot (an area with a strong magnetic field).

Lucie left school with 9 GCSEs, 4 A-levels and one AS-level.

*You may have seen Lucie Green on television – she has appeared on *The Sky at Night* with Patrick Moore. Here she describes her work as an astronomer and the opportunities it has given her to explain science to a wider audience.*



Lucie in front of a telescope in Arizona.

Throughout school I had a love for physics. I found it fascinating to learn about how the world around us worked and how laws are formulated to describe what we see. Later, when I developed a passion for art, I couldn't decide which path I should follow after A-levels. A one year course in art seemed like a good way to test the water so I began an art foundation degree.

After a year I decided that art wasn't a career path I wanted to proceed down, and I was left with my other love, physics. There are a whole range of physics courses at university now and I saw one that really caught my imagination; physics with astrophysics. I went to study at Sussex University where the course gave me a great grounding in maths and physics and also taught me what we have learnt about the workings of the Universe.

During one of my summer holidays I spent some time doing work with funding from the Nuffield Foundation. Part of the project involved an observing trip at the Crimean Astrophysical Observatory in the Ukraine. That was somewhere I never thought I would go! This trip was a turning point for me and even though I didn't realise it at the time, everything I do now has come from it.

I went there to observe binary systems; two stars in orbit around each other. But the observatory also had telescopes that are used to observe our nearest star, the Sun. I still remember my first views of the Sun using their telescopes when I saw the Sun in a completely new way. Instead of an overwhelming bright yellow disc I saw structure and detail. Giant structures known as prominences seemed to be leaping off the Sun's edge and our local star seemed a hive of activity.

Research life

I then went on to do a PhD at the Mullard Space Science Laboratory (MSSL), part of University College London. I studied the immense eruptions that blast away from the Sun when prominences do manage to break away from the solar surface. local star seemed a hive of activity.

I still work at MSSL researching these eruptions. At the moment we have some exciting new data coming from two recently launched space missions. One is a Japanese spacecraft called Hinode. The UK has a telescope on board so we are heavily involved and are making a great contribution to the science being carried out. Hinode is allowing us to study the changes which lead to prominences erupting; in particular we are able to monitor their relation to the Sun's giant magnetic field which changes over time.



An artist's impression of the Hinode spacecraft; Lucie receives results from this spacecraft and tries to interpret them.

What amazes me about astrophysics is that even though our knowledge has come a long way, we still know so little about the Universe. I find that idea that we are only able to see 5% of what the Universe is made of completely mind-boggling. I have always thought that searching out and discovering new things is fundamental to humanity. Not only do new discoveries in science have a very obvious impact on us, often leading to a better quality of life, but we also have a drive to understand our place in the Universe.

Talking science

I'm interested in doing science but also in telling people what is being found out in my area of astrophysics. For the last 8 years I have been involved in many projects which talk to schools and the general public about astrophysics. I have given talks, done regular radio slots, appeared on *The Sky at Night* and also co-presented two other astronomy programmes.



*Lucie has appeared on *The Sky at Night* alongside its presenter Patrick Moore.*

I am now funded by the Royal Society under their Dorothy Hodgkin scheme. (Dorothy Hodgkin was a British scientist who won the Nobel Prize for Chemistry in 1964.) The scheme allows me to do research for part of my time and for the other part I am involved in activities that communicate science. At the moment I am working on publicising International Heliophysical Year, a United Nations initiative which celebrates solar system research and exploration. The Sun plays a central role as, through its emissions, it affects all the objects in the Solar System.

Look here!

Read Lucie's article in an earlier issue of *CATALYST* in which she introduced the International Heliophysical Year:
http://www.sep.org.uk/catalyst/download_article.asp?article_code=34

For a while, Lucie worked on the Faulkes Telescope Project, a scheme which allows school students to use a real telescope:
[faulkes-telescope.com](http://www.faulkes-telescope.com)

Lucie contributed to the Suntrek project, helping to develop a website which explains solar physics: www.suntrek.org