Astronaut doctor, a rare profession

A meeting with Dr Bridget Godard, who recently joined the team of Astronaut Doctors in Cologne. Dr Godard talked about her career and her profession.

How did you become an Astronaut Doctor?

The first requirement of course is having a medical degree! However that is far from being sufficient. It's crucial to be enthusiastically involved, to have been an academic and then a professional practitioner who was already moving in this direction and laying the groundwork for this next step. You also have to be familiar with the space environment and its very specific characteristics in order to understand how it affects the human body. As far as I was concerned, I felt that I was destined for this kind of career and ever since I began studying medicine, my choices have always been guided by the aim of not only working in a space environment but specifically in the restricted ‘universe’ of astronauts. Since I couldn't be an astronaut (though I had once hoped to be one) I wanted at least to be able to work with them! Once I had my medical degree I first practised as a GP. Then, to get closer to the space field, I earned a post-doctoral degree (DEA) in Professor Berthoz's laboratory for physiological perception and perception of action [11] in Paris. I was also fortunate enough to make a parabolic flight during which I performed an experiment lasting for a few seconds of microgravity. I then specialised in medical biology and after working for a few years in various laboratories, the door to space really opened for me when I joined MEDES in Toulouse in 2005, to reinforce the medical team working on a prolonged bed rest study. I was lucky enough to perform different jobs at MEDES, of which the main one was that of doctor in charge of clinical research. I also took part in several telemedicine studies and in selecting European astronauts before finally joining the team I am now part of at the European Astronaut Centre.

Could you tell us what your profession involves?
'Astronaut doctor' is not necessarily the right term since we are not literally their doctors. Our work is in fact divided into two distinct stages.

The first one involves accompanying an astronaut who is assigned to an actual space mission. There have been more and more such missions since Europe became involved in the International Space Station with an average of one European astronaut staying on the ISS each year for a long period (six months). During this stage we are responsible for our astronaut from 1 year before the flight to 6 months after he or she returns. However we do not examine the astronauts directly ourselves. This is done by a doctor from the DLR (German National Research Centre for Space and Aeronautical Medicine), who does all of the examinations necessary for the flight while we check that the astronaut is fit enough for a flight in microgravity. We are there to ensure that the astronaut is in perfectly good health for the flight but also to do whatever necessary to keep him or her healthy throughout the flight until he or she returns to Earth. We also supervise activities which might be harmful to the astronaut. We might for example recommend that he or she avoid a certain kind of exercise or participating in certain scientific activities, for health reasons. We might also advise a more suitable diet for his or her metabolism.

While we do not meet the astronauts regularly outside of space missions we are nevertheless their medical consultants during flights. We are able to evaluate their state of health through private, weekly medical conferences. We analyse with them certain key medical data which
are an indication of physical and psychological fitness. These sessions are very intense as we have to be particularly alert, capable of understanding and analysing and finding solutions for the particular situations encountered, at a distance.

The second stage involves more administrative work during which we are no longer responsible for an astronaut on a mission. At this time we take part in several meetings with international teams for joint discussions on ways of improving our diagnoses and preventive and therapeutic care in the highly specific space environment. These periods also enable us to continue our medical training and to stay informed of the latest advances in medicine or science, which is indispensable if we are to give our astronauts the best possible care. We also continue to monitor them by means of an annual examination which determines whether or not they are physically and mentally apt to do their work.

There are only three people in your position in Europe. This makes you practically unique. How do you feel about your job?

I am well aware that I'm fortunate to be able to work in such an environment and to achieve my dreams. It is extremely worthwhile to be practising advanced medicine, which is beyond the reach of most doctors. Furthermore we work as part of an international team which enables us to get to know our partners, NASA, JAXA, FSA. Unlike conventional doctors, we have very very few patients! On the other hand these few patients take up all of our time. Furthermore it is a rapidly evolving profession and it's very exciting to be part of the adventure. Most of the astronauts who have just been selected for recruitment by ESA will be flying in space for the first time and it will be a great challenge to help them prepare for it. I have always wanted to see the Earth from the porthole of the space station, but since I cannot do that myself, I am delighted to be able to accompany the astronauts who have been chosen to perform their missions as best they can, while maintaining that most precious treasure of all, their health.