On February 16th this year the first female space tourist Anousheh Ansari visited the Faculty of Aerospace Engineering to give a talk about commercializing spaceflight and making your dreams come true. Ansari made a trip to the International Space Station in September 2006 and stayed on the space station for eight days. Before her talk at the Faculty we were fortunate to be able to interview her on how the spaceflight impacted her life and how she sees the future of commercial spaceflight.

After months of training and preparing yourself for the space flight to the ISS, what was the most surprising experience during your flight and stay at the space station? The surprising thing is that no matter how much you prepare and imagine during those months of training how it would be like in space, you can never imagine what it is really like to see Earth from space with your own eyes. I have been a space fan since my childhood, and I have been looking at posters and pictures of Earth from space many times, but to be able to see Earth from space with my own eyes has a completely different effect. And for me this was a very emotional and profound experience.

As the experience was so emotional and profound, could you say that it changed your life, or your vision on life itself? I wouldn’t say the experience necessarily changed me completely, but it was an empowering and humbling experience at the same time. Empowering, because it made me do things which I considered to be too challenging in the past. Humbling, because when you look at Earth from space you see that everything that you know about and defines you as a person is right there in front of you. And when you are in space, you realize the vulnerability of our planet within the context of the whole universe. Realizing that, you will think twice before worrying about little things; it makes you focus on the bigger picture.

Could you give an example of the empowering effect the space flight had on you? I try to be involved in a lot of social events and I like the idea of changing the next generation in such a way that we will have a more peaceful relationship between countries, but I did not think I could do anything personally. However, now I feel one person really can make a change. It may not be something that I do individually, but I may be the missing link, or that missing piece that can bring several things together and might result in a big change. I shy away from talking about it, because it makes me sound like Miss Universe,
but I do feel that it is important to create a peaceful environment on Earth. A lot of the ingredients to accomplish that goal are already there. Kids, due to modern communication technologies, are more connected across the globe and the concept of globalization has helped to connect people at different levels. I hope that we will be able to take advantage of this combination of communication and globalization by somehow creating a movement from the youth across the globe and as a species, and I think that reason alone could be a good enough reason for us to explore outside. I think in the future our ability to explore outside our planet and hopefully outside our solar system, may be essential to our survival. So I think that is important in the long term. But also just short term, in order for us to be able to get there, we have to get enough experience to adapt our bodies to be able to survive in space. And the only way to do that is to go there by yourself. You cannot send robots to tell you how it would feel to be in space. You have to be there, experience it and adjust to it.

With the Ansari X Prize (see text box) you want to encourage commercial spaceflight. Why is commercial spaceflight important and what is the advantage of commercial spaceflight over governmental spaceflight? Historically the biggest hurdle in spaceflight was the ability and cost to actually access space in order to explore it and take advantage of all its resources. The biggest advantage of private industry’s involvement into spaceflight would be, at first, to bring down the cost of access to space. Despite all the technological advancement of the past decades, for example in nanotechnology and robotics, we are still going to space in the same way we did fifty years ago. I think this has to be changed and the only way to change that is by the involvement of private industries. In the past fifty years spaceflight has been a realm of governmental agencies, which are not ideally set up to think about reducing the cost of access to space. Moreover, these agencies simply do not have the

"Being in space was an empowering and humbling experience at the same time."

try to, since they are the future leaders of our countries, engrain the notion of being one with every country in the world within them. I realize that this will be a very slow change and I do not think it will happen anywhere in my lifetime, but I do hope that I can start something that will evolve, flourish and have a life on its own in the future.

What do you think are the main reasons why we should send people to space? There are many different reasons for different people. First of all it is just, I think, a human curiosity for exploration. That human curiosity has helped us evolve and survive

THE ANSARI X PRIZE
The Ansari X Prize was a space competition in which the X Prize Foundation offered a $10,000,000 prize for the first non-governmental organization to launch a reusable manned spacecraft into space twice within two weeks. It was modeled after early 20th century aviation prizes, and aimed to spur development of low-cost spaceflight. Created in May 1996 and initially called just the “X Prize”, it was renamed the “Ansari X Prize” on May 6, 2004 following a multi-million dollar donation from entrepreneurs Anousheh Ansari and her brother-in-law Amir Ansari. The prize was won on October 4, 2004 by the Tier One project designed by Burt Rutan and financed by Microsoft co-founder Paul Allen, using the experimental spaceplane SpaceShipOne (see figure 1). $10 million was awarded to the winner, but more than $100 million was invested in new technologies in pursuit of the prize.
very low; when your app is not a success you can write another one. Above that, space business does not have short term return. So as an entrepreneur you must have the passion, the risk tolerance and an appetite for long term investments if you want to get involved with space activities. The first small step for commercial spaceflight has already been taken by the sub-orbital flights of the SpaceShipOne (see figure 1) which won the Ansari X Prize. I think a large market can exist that can benefit from these suborbital flights; you do not have to be in great physical shape, it is not limited to a certain age, the health requirements are less and the duration of the training and trip itself are very short. So I see those flights as the first step and

"You could say I am a sort of evangelist for commercial spaceflight."

once commercial suborbital flights really start to take off and there is activity in that area, people will start to consider the orbital capabilities. The orbital capability will also depend on what NASA is doing, but the whole project of investing in private industries to build capabilities to give access to space would be the beginning of an orbital private endeavor, which can be commercialized for private passengers to take advantage of.

In the past you encouraged commercial spaceflight with the Ansari X Prize. What is your current involvement in commercial spaceflight?

I do not have a direct involvement with a company that is for example building vehicles, but you could say I am a sort of evangelist for commercial spaceflight. I do a lot of talks to educate the public and especially students about the importance of it. Also, I continuously talk to regulators in order to make sure the regulatory environment is as suitable as possible to promote private industry’s involvement. So, most of my time these days is filled with creating awareness and evangelizing commercial spaceflight. Above that I am still working with X Prize on future prizes to continue down the path we have taken. There will definitely be a new Ansari X Prize.

To conclude, what do you think the world looks like in twenty years?

I am an optimist, so I have great hope for a future generation which is more aware of how they are living and impacting the environment. One can already see a big change in the awareness of people in the past decade. For example, I could not convince my mother to start recycling, but now she does. To get people to change their behavior takes time, but since I do see this behavioral change taking place I have hope for a better future for our environment. Also, as I already mentioned, I hope that the new generation which grows up with modern communication and globalization will have a better appreciation for the different nations and cultures of our world and that they will create more opportunity for a peaceful coexistence.

ANSARI’S SPACEFLIGHT

At first Ansari trained as a backup for Daisuke Enomoto for a Soyuz flight to the International Space Station. On August 21, 2006, Enomoto was medically disqualified from flying the Soyuz TMA-9 mission that was due to launch the following month. The next day Ansari was elevated to the prime crew. She lifted off on the Soyuz TMA-9 mission with commander Mikhail Tyurin (RSA) and flight engineer Michael Lopez-Alegria (NASA) (see figure 3) at 04:59 (UTC) on Monday September 18, 2006 from Baikonur, Kazakhstan. Ansari became the fourth (and first female) space tourist. The space craft docked with the ISS on Wednesday September 20, 2006, at 05:21 (UTC). During her eight day stay on board the International Space Station, Ansari agreed to perform a series of experiments on behalf of the European Space Agency. She also became the first person to publish a weblog from space. Ansari landed safely aboard Soyuz TMA-8 on September 29, 2006 at 01:13 UTC on the steppes of Kazakhstan with U.S. astronaut Jeffrey Williams and Russian cosmonaut Pavel Vinogradov.