

Sky Without Barriers

With special participation

Esa astronaut, Samantha Cristoforetti

Aeroclub Cremona "Migliaro"

Medias interview session with (ESA) European Space Agency astronaut, Italian Air Force Captain Pilot Samantha Cristoforetti.

Anchorman: AskaNews Italy journalist Pino Di Feo, pilot, official PR of Italian WeFly!Team.

Here is the edited, translated transcript of Cristoforetti's interview, Q & A. Interview and more videos AeroClub Cremona; press publication.

Initiative Dare to Fly: "I interpreted the message not only for disabled people, but for everybody else" –says Cristoforetti. "Because for me, people like Marco and Alessandro, are of inspiration for everybody. The strength, perseverance, passion and even the friendship they share to pursue some goals, have been an example for me and can be an example for everybody. Therefore I wanted to share their story with everybody".

Question.

What are you working on at the moment?

Answer.

On several things: for one I am dealing with Chinese matters. We have various initiatives of cooperation with China at Esa, I am among the people dealing with it and am spending plenty of time learning Chinese: it requires dedicated efforts. Furthermore management of technological projects. They are not strictly bonded to the International Space Station, rather to what will follow afterwards, Lunar orbital missions and lunar landings next.

Question.

When will you return to space?

Answer.

I will return in a few years time, my colleague Nespoli just came back, next year is Parmitano's turn. We don't know exactly when there will be another opportunity for an Italian astronaut. When I'll be informed, you will be as well.

Question.

How difficult is it for a woman to reach the stars, as you did?

Answer.

I think it is as difficult as it is for men

Journalist's question.

Maybe a little obstruction?

Answer.

Are you asking whether there is a hostile environment towards women?

Journalist's question.

In some typically male environments there have been cases, perhaps not in yours. Is that so?

Answer.

I've never perceived it.

Question.

What has been your favorite experiment?

Answer.

They are all beautiful and interesting

Question.

A suggestion for someone who would want to undergo a career path such as yours?

Answer.

To become an astronaut there are the traditional paths: Tech & Science (STEM), to study Physics, Chemistry, Biology, Engineering, and Medicine. Alternatively Aeronautics: become pilots, typically military pilots and test pilots. A colleague of mine and I have a mixed background, we first graduated as engineers and became pilots afterwards. This is also a possibility. There is a lot of buzz in the space world, so a sort of democratization will eventually occur in the coming years: free access to sky and space, so there could be different figures, even journalists in space. That would be nice.

Question.

What did you miss while in space?

Answer.

A shower

Question.

How about food?

Answer.

The food isn't as depicted in public imaginary. I must admit food onboard the ISS is varied and there is the possibility of garnishments according to personal preferences. It comes in packages ready to lunch, dinner and snacks. I enjoyed delicious food made in Italy: veggies, proteins, carbohydrates, rich in nutrients, tasty and well balanced for health .

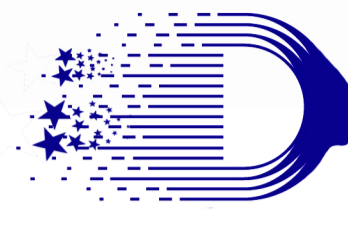
Question.

Does space sickness exist?

Answer.

Perhaps, but I don't suffer from it. I feel pretty good on earth, as well. I surely wish to go back to space soon, but wouldn't consider it a form of sickness.

Anchorman, journalist Pino Di Feo: "Thanks to all journalist colleagues. Samantha, microphone and screen are yours, take us to space with Futura, and once again, thank you!"



Cristoforetti Q & A (questions and answers) with audience.

Question.

I am a primary school teacher. My students had the opportunity to meet a speleologist, then researched about Samantha, Luca Parmitano, Paolo Nespoli. At our school they met Chef Stefano Polato. Thanks to these meetings our children highlighted the concept that it is up to their school teachers, if one day in 2035 there will be humans living on Mars. I would like to thank you, Samantha, for motivating the schools, and would like to ask what we, as teachers, can do to nourish and grow what you astronauts are doing for us. And I would also like to thank you very much!

Cristoforetti.

First of all I would like to thank you for your question. I keep saying how teachers are the real heroes and heroines of every society, of every country. Starting from the primary schools, when I am asked why I wanted to become an astronaut, how the passion grew, a thought always goes to my teachers of primary school. Because it is the key phase of growth, when parents and family have an important role of course, but somehow teachers are fundamental because they open boys' and girls' world, and are the ones who need to understand if there is a passion, something that can be facilitated and helped.

I remember when I was a child in fifth grade, these fascinating lessons on astronomical geography. From there on, it is a path downhill. If a boy, a girl completes the fifth grade with a dream, a passion to pursue, regardless of how absurd it may sound. Because, let's be honest, saying I want to be an astronaut seems to be absurd. Only few of you here will become astronauts, in one generation only six of us have become astronauts in Europe. But it doesn't matter, because had I not succeeded in becoming an astronaut, and it could have taken a little thing, something that could have gone differently at the wrong moment, I wouldn't be here, someone else would be here, someone as good as or maybe better than me.

My point is, when you have a dream that motivates you, accepting hard work comes easier. To accomplish important goals, it is necessary to accept working hard. Like going to the mountains, carrying a heavy back bag, step by step, one reaches the top. One has to accept efforts, hard work, and since we aren't born masochists and we all seek pleasure rather than pain, one can only accept the hard work if one has a dream. At the end it isn't important whether you get there or not, but if it has been fueled, one reaches adult life with richer experiences, greater awareness and gratification. So I think that primary school teachers are the ones with greater opportunity, and responsibility at the same time, to grow this opportunity of dream in boys and girls.

Teacher continues.

In your dream, Samantha, you have also united the dreams of many women. A girl from Pakistan has sent Stefano Polato a letter saying: "I want to be a woman who takes care of astronauts". On behalf I bring you greetings and hug.

Cristoforetti.

"Long live teachers!"

Journalist Pino Di Feo introduces Marco Iannuzzi, Italian Air Force Lieutenant Colonel, who has had an airplane accident. He is now an Invictus Games multiple medalist for GSPD (Italian Ministry of Defence Paralympic Sport Team).

Marco Iannuzzi's question.

Speaking of dreams, what is a dream for near future for you and for primary school generation growing up?

Cristoforetti.

You mean about space?

Marco Iannuzzi.

In general

Cristoforetti.

In general... is big word, and everyone has his/her dream. As far as I'm concerned, although I know it will take some years, I cultivate my dream of returning to space. (Jokingly) Earlier on someone asked if I suffer from space sickness. I am very fine and happy to live on earth as well, where I'm busy with very beautiful and interesting things. However I hope to go back to space as soon as possible. For those who are now in school, the future generations of astronauts, I think there shall be beautiful things awaiting, as we are preparing the foundations necessary to send humans into lunar orbit first, and then to the moon surface. It won't be in the same spirit as Apollo program fifty years ago, that is going to the moon to put a flag on the surface and come back home. Rather more discerning, robust and economically sustainable, and long-lasting. That will represent the stepping stone for future journeys to Mars. It won't happen for my generation, but surely for the young boys and girls who are now listening to us here today.

Journalist Pino Di Feo by mistake introduces Augusta Westland Helicopters' pilot as Leonardo Helicopters'.

Pilot:

First of all thank you for being here today, on a Sunday, I imagine it isn't easy.

Cristoforetti -jokingly.

It's Saturday.

Augusta Westland's pilot -laughing.

Indeed, I meant on a holiday. I'd like to ask you a question. When I was a kid I had two dreams, wanted to become either a gas station attendant or an astronaut. I stopped half-way and became a pilot. Every time I land somewhere around the world I tell myself: "look where I brought myself".

Cristoforetti -jokingly.

And you're the one who refuels the plane.

Pilot -laughing.

Of course! And every time I tell myself "look where I brought myself", instead of "look where I got to". So my question for you is as follows: did you ever ask yourself "look where I brought myself". And if so would you feel like thanking someone, besides yourself, since it surely has been a hard task implying strong will and gratification for a dream come true?

Cristoforetti.

I have been thinking about it. All the people to be grateful to when you write your story, starting from your family, your parents. Obviously I wouldn't be here, had it not been thanks to my fantastic parents. Furthermore, my teachers, my friends, relatives, and people you encounter on your path who understand your potentiality and give you a hand. They are countless. Sometimes it seems that someone wants to give you hard time, but then, ten years later, looking back you think that although it wasn't meant to be helpful, it did help in the end. Bottom line is, we are all interdependent one with another; we ought to be grateful for the opportunities we have, and we all have many. Just being born in this country, for instance. This country we all blame in some way, for the habit of comparing it with other countries where life is better. Obviously there are countries where life is better, but actually there are also many, really many, where life is actually a lot more worse. So it's a matter of being very lucky and grateful to be born in Italy.

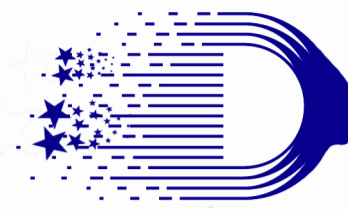
(Meanwhile Cristoforetti spots life size ultralight plane with rotors surrounded by the audience in wheelchairs. Concerned that something might self-start, a prompt reassuring "All good!" comes her way from expert pilots.)

Journalist Pino Di Feo.

While going around to reach other airport's visitors for their questions, I would like to ask you a question myself. How's life onboard the International Space Station, what are the benefits and disadvantages of living in micro gravity? And what is microgravity, for not everyone knows about it.

Answer.

Microgravity is a technical term, with a specific wording going with it. Long story short, microgravity means lack of gravity. One floats, moving and doing things is easy and effortless, and I found it very pleasant being in total weightlessness. At the same time, there are drawbacks.



In the meantime, Cristoforetti waves at a group of fans among the audience: "I saw you Spazio Allo Spazio, ciao! -Smiling- No need to keep waving your arms around for an hour. I saw you".

Addressing the audience adds: they are young guys from a school...

Now addressing school guys. "Is the teacher there?... where?"

Spotting the teacher. "There you are, ciao!"

Once more addressing the audience: it's a fantastic school where every year they create wonderful space related projects. One of those heroes teachers I told you about earlier on.

So microgravity... as I was saying, a beautiful, wonderful, fantastic sensation, which also has practical drawbacks. All of us for our entire life, are used to put down something, say on this chair, unless someone tricks me and takes it away, when I turn around it will still be there. In space everything is different: you have to get used to stick everything with Velcro, hooks and bunjee ropes, need being careful when opening an envelope because half of the things fly away. -Smiling. All these things happen when you've just arrived and still a rookie, half of the time gets spent searching things that you've lost. There are stories about tens of thousand objects lost on board the International Space Station, and no one knows how, but somehow they've disappeared from the inventories; we're talking about fifteen years of operational activity. Then keep oneself clean. Microgravity implies that there is no tap water, therefore no shower, so it's like being in a camping where there is no water stream where to source water from, hence the use of wet tissues to clean oneself. It isn't ideal, nevertheless I felt fairly clean. These are the main differences, and of course a limited mobility, confined to a small volume of space where one can't think of going out for a movie night. There are also all of the advantages of a simple life: you don't have to think about going to work by car, no need to think about traffic, or think about shopping. When I came back, I remember the morning little stress caused by having to think about all the things required for the whole day, which needed to be packed in my back bag. Silly, but had been used to a place where I lived and worked and all needed was readily available there, the essentials. So this little complexity of daily routine appeared a little stressful at the beginning.

Journalist Pino Di Feo jokingly addressing Cristoforetti.

Ah, and let's not talk about the phone that you threw at your colleague!

Cristoforetti.

Oh no, I didn't throw it, I stopped halfway. The typical mix of legends about astronauts dropping their glass. In space you get used to leave things in the air, since they stay there: when busy with hands, you let things in the air to switch objects. If you turn around and go away you lose it, but if you keep an eye on it, you'll find it. Another thing is throwing things towards one another, of course. So a few hours after reentry, since the landing area was covered by signal, my flight doctor lent me her mobile and after a phone call I mimicked a phone launch towards Brigitte, but soon stopped when I realized the outcome.

Audience question.

According to you, is one of the challenges humanity will have to face in the near future the imperative need to find a new planet and colonize it in order to survive?

Answer.

In the near future, I don't think so, but if we can be optimistic and imagine for our species a long future on our planet, nothing is granted, but let's hope so. As the story goes, if dinosaurs had a space program they would still be around, but they are extinct instead, anything is possible like a big meteorite impact. I wouldn't consider it as my first priority, but let's take care of our planet and try and stop climate evolution in order to leave this planet to future generations. In parallel, why not make sure that another planet will be available in case of a catastrophe, similar to the impact which caused dinosaurs extinction.

Audience question from a young person.

Did you ever get the urge to go to a pizzeria while in space?

Cristoforetti -amused.

I didn't think so much about pizza, we had delicious package food. Although one of my colleagues did, Paolo Nespoli: he probably got news from a previous space mission, that he would have been craving pizza, so he managed to have it sent to space.

Audience question.

Mr. Nicolas Hulot, French Minister for environment, said that we should stop living like cow-boys and start living like astronauts on our planet. We should be careful about what we drink, do, and eat. What message would you give us?

Answer.

I share my colleagues astronauts' opinion in saying that our planet is very much like the International Space Station: a closed system, with limited resources, the budget needs being managed properly. Astronauts survival depends on International Space Station efficiency, if something brakes it needs to be repaired. Furthermore six people share the same space, in case of an emergency cooperation and good harmony among crew members is essential. The first responsibility of every crew member is to stay healthy, positive and productive, at the same time to look out for every team member's well-being. With little imagination, it is clear that the same concept, in a much bigger scale, can be applied to our planet. Seen from space our planet appears like a big space ship and we are all on board, and not going anywhere out of here. There's the Mediterranean Sea, the Alps and yet we are one crew sharing one big spaceship. Sure it's easier said than done, if we think that six people with very similar training cannot be compared to seven billion people. Nevertheless humankind's goal is to understand that we are not passengers here, but rather crew members.

Audience question.

How do social networks effect astronauts' performance and work on earth and space?

Answer.

Regarding missions management, operational and scientific aspects, very little. It changes the way missions are made available to the public, but everything which involves PR is dealt with mainly by professionals. The public is involved in reach out events. If social media, Twitter were to disappear the International Space Station would survive anyway.

Journalist Pino Di Feo introduces a surprise guest who just joined in: Simone Moro. He is one among the greatest mountain climbers. I would like to take this opportunity to do something that has never been done before. Here we have an astronaut, Samantha Cristoforetti, we have a mountain climber who reached four times the Everest's summit on foot, one and half by helicopter, Simone Moro. At this very moment there is another Italian astronaut, Maurizio Cheli, who's climbing Mt. Everest. I'd like Moro and Cristoforetti to send Maurizio Cheli good luck wishes.

Simone Moro.

Samantha has had the best views of Everest, since she saw it from above. Maurizio Cheli is at Camp 2 during these days. These are good days because they precede the monsoons, winds are dying down and today the climbers reached 7.300 m; within a week they should reach the top. Therefore my good luck wishes, I'd love to be there with them, but it's nice to be here, too.

Cristoforetti.

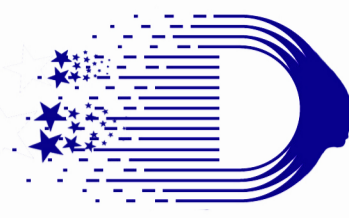
People helping paving ways: Simone Moro has been training Maurizio Cheli in mountaineering. Cheli, now retired from the astronaut corps, is a former Italian Air Force pilot and Alenia test pilot, the third Esa astronaut of Italian nationality to fly to space on a Space Shuttle in the '90s, after Franco Malerba and Umberto Guidoni.

Audience question.

How is the human body effected during long-duration missions in space?

Answer.

The human body undergoes demineralization, the same effects of osteoporosis in humans living on earth, also replicated with bed rest studies. Bones are living tissues that die and rebuild themselves. This process speeds up in space, that is why counter measures include physical training. In space astronauts train with squat, weightlifting, run etc like on earth. The space environment didn't cause extreme side effects on my body, not that I notice, however it's all part of ongoing scientific studies. In microgravity conditions change and the human body adapts its cardiovascular, neurological, and immune system.



Journalist Pino Di Feo and Cristoforetti join WeFlyTeam in the audience.

Since not everybody knows, I would like to add that some of the experiments carried out on board the International Space Station benefit almost immediately humans living on earth, is that correct, Samantha?

Answer.

Immediately is a big word, science requires time. Some of the experiments I conducted during my mission in 2014/2015 are still ongoing and data being processed. Science has its own timing; we live in times of instant gratification in almost everything, but we cannot expect to have results of experiments issued today and be applied tomorrow. It can happen in exceptional conditions, but they usually require patience.

Audience question by a young person.

How did you get to the spaceship?

Answer.

We go to space with a machine that produces a powerful thrust, which defies earth's gravitational force. When a rocket flies upwards it requires speed to continue its journey, otherwise once the engines are turned off it would fall back to earth. There is a misconception regarding gravity: when people say that the International Space Station is on a state of absence of gravity, that notion isn't correct. The ISS orbits around the earth within the effects of earth's gravitational pull. Our moon, natural earth's satellite, is thousand, thousand times further than the International Space Station. The fact that it keeps its orbit around the earth it's because earth's gravitational pull keeps it there. When we travel to space the rocket thrust pushes us upwards and simultaneously gives us the speed that allows us to orbit around the earth. In space we travel at around 28,000 km/hour. The earth's gravitational pull would bring down to its surface the Space Station, if it didn't travel so fast and on a steady orbit. The motion of the Space Station in constant freefall, creates the state of weightlessness also named microgravity.

Audience question by young person.

What can you see while in space

Answer.

The ISS is only 400 km away from earth, it travels at a speed of about 28,000 km/hour, 7km/second. Our space balcony is in the Cupola, a module with many windows which allow viewing progressively slices of the earth. For instance, when we are above Europe the view spans from UK to Greece; sideways the horizon, above and below, and the sky above. If we turn all lights off on board the ISS, it's like being on an isolated place like in Chile in the mountains. With no lights, the stars are bright and twinkle.

Audience question by Mayor of Cremona, Gianluca Galimberti

First question, the strongest feeling you felt traveling to space, the second: it must be amazing to see the earth from space, what did you think when you saw it from up there?

Answer.

As I said before, the sensation of the earth being a spaceship is more direct when viewing it from space. Many astronauts talk about the earth as being fragile because of thin layer surrounding it. I didn't get that impression. To me it seemed very solid, it's been around for billions of years and will continue to exist for billions of years. What seemed fragile to me it's us, the human presence on earth; it seems in a transition phase. You see signs, changes, phases that lasted hundreds of millions of years, you see our Alps, impact craters, signs of tectonic plates movements, you see things that happened in phases that lasted hundreds of millions years. Human presence can be seen at nighttime when lights are on, during the day you can't see it. Compared to earth's grand scheme, in the blink of an eye we can lose the entire history of humankind. So the feeling of scaling, of humility and together take care of it to have a chance for it to last for a while longer, and not just for a blink of an eye.

Audience question.

A worry before going to space and something to feel happy about when you came back.

Answer.

Approaching mission time you realize how very well prepared and trained for all technical and difficult things you are, like a space walk, maneuvering the robotic arm, conduct scientific experiments, etc. But then you wonder how will it go when I'll use the bathroom? The worse thing that can happen, when you're a new station member, is to tell them to be careful because something got lost. So something to be very happy about is that everything went well.

End transcript/translation Italian-English