

Reaching for the stars (28)

Music. I want to be part of something big. Ten, nine, eight, seven, six ...

6, 5, 4, 3, two, one ...

And lift off of the space shuttle Atlantis. I applied to become an astronaut. Houston is now controlling, Atlantis is rolling on course.

My name is Judit Szulágyi, I'm currently a professor in computation and astrophysics, I'm 33 years old and I'm applying to becoming an ESA astronaut. And I'm Jennifer Khakshouri, the captain of this episode.

We're gazing into the sky imagining what space might look like and talking about people's dreams to go there one day.

The European Space Agency is currently recruiting astronauts and maybe Judit will be one of them. The dream of leaving the Earth's atmosphere

came true for my other guest in this episode. I'm Claude Nicollier, I'm a Swiss citizen

I have been an astrophysicist and a pilot of the Air Force. I had a passion for space for stars

and for airplanes since a young age and studied physics in Lausanne, astrophysics in Geneva, became an astrophysicist

with fighter pilot in the Swiss Air Forces as a side activity for a long time and eventually when it became possible for Europeans to become astronaut I signed up for it and I was accepted in the first group

of ESA, ESA is for European Space Agency astronauts in 1978, a long time ago. That's what Judit would like to achieve as well.

So I wanted to be an astrophysicist since I was 13 years old

and this is what I'm doing now so that was my first dream and when it came true I started to strive for new challenges, new dreams and this is how it came to be that I wanted to

try the astronaut selection as well. And when you were a child was there something like a key moment that you somehow got the idea that you would were drawn to the stars?

Well, as a child I was really into sciences and when I started to watch science fiction this is when I was becoming interested into stars and planets and I started

study things on the internet what I could about astrophysics and this is how I fell in love with astronomy and astrophysics. And what science fiction was this? I really like the Star Trek Voyager.

It had a female captain and it was a good role model for me.

Music (Star Trek)

Star Trek Voyager lasted for 7 seasons it's the only Star Trek series with a female captain,

this is a lot regarding equality in this field not only on screen but also for real in Europe at least.

Actually ESA is explicitly looking for female astronauts and people with disabilities.

In other words ESA wants more diversity and inclusion.

It's usually the minorities in specific fields such as women, people of colour or queers who have the defend diversity.

I decided to turn this around while talking to Claude Nicollier.

You studied astrophysics and were a fighter pilot in the Swiss army as you said. Would you have had the same career had you been a woman?

Astrophysics certainly yes, in fact, astrophysics is a field of science where there are many women, generally speaking, especially in France I think there are even more women than men being astrophysicists.

The fight about it was not possible at that time for women, it is now

The fact that I was a fighter pilot was a plus for me but it was not at all a requirement. I remember during the interviews for the selection they asked me

a number of questions about situations I had been in danger in my life where I had to manage risk and there were a number of situations as a fighter pilot where I had to manage risk more so

then as an astrophysicist and in a way you don't have to be a pilot, again, it's not a requirement. If you are it's a plus if you are doing scuba diving, if you are parachute jumping, if you are a mountain climber

activities where you have to manage risks it's a plus in the selection there's no doubt about that.

Had Claude been Claudine he would not have been the first astronaut of Switzerland.

Today the path to becoming an astronaut seems more open than before. Still, experience in dealing with risky situations is a plus.

Did Judit ever jump with a parachute or climb vertical mountain walls?

No, I personally do not have such experience but I'm a really good swimmer and that is also very much counting because you have to be able to do a driving test up to 8 hours per day

being underwater and mimicking this microgravity environment and swimming and snorkelling and scuba diving this is something I do what I do so I did this part

I would say. So are you a fearless person?

I'm not sure that this is true that nothing scares me but definitely I think I have a quite resilient personality in comparison to others

so I would say that less things scare me than an average person would be scared of. Claude travelled to space all in all 4 times.

Even though he's retired Claude is still an ambassador for the ESA.

What does it take in the highly competitive astronaut selection to be one of the lucky ones? You have to be as normal as possible.

What does that mean? This means that in the whole selection they try to find areas where you are not normal and

when you are abnormal in too many areas then you are not gonna make it, if you are normal mentally and physically and in your motivation then you're going to make it and I know it may

seem strange because it seems like the selection is very hard and finally we only have a few who make it but it is the case if you are very normal you're going to make it.

But I mean if you're normal then you don't even make it to the first round I would assume I mean I would consider myself normal but I would never

have the idea to apply to become an astronaut. Well, in a way you have to be abnormally normal.

(Laughs) You must be in a pretty good shape physically.

I wish that it was more normal than it is. Unfortunately, many people suffer from some medical problem, that can be in the eye or other features which is such that they are not gonna make it and the in terms of your mental position, the way you address issues and problems you have

to have a pretty clear mind and have a goal and work towards a solution of a problem and I find this pretty normal,

and also the idea of having a passion this I find pretty normal also. It can be a passion for butterflies, a passion for race cars, I passion for astrophysics

and I don't know where it came from but I had this in me,

I had a passion for stars and for airplanes, a devouring passion and it was this devoured passion that helped me get where I eventually went.

But passion is pretty normal I think and the ones who have no passion I find it pretty abnormal. When I talk to Judit I tell her what Claude just said.

She laughs and answers: Actually this is a surprising statement for me. I think astronauts are very special people

I would say, so maybe he meant that having such a personality which is very approachable who can communicate well with

the media, with kids, doing outreach. I would assume this is what he meant but otherwise, I think astronauts have to be up for the challenge in terms of physical challenges, in terms of stressful situations so I wouldn't say that astronauts

are everyday people. I think this is just a modest personality and he doesn't want to show off, that he's humble

or that he doesn't think of himself as a glamorous person although of course there's a lot of glamour if you look from the outside, if you look from let's say everyday regular people's point of view.

I think that arrogant people wouldn't be good team workers and because as an astronaut you have to be good in teamwork, therefore, I believe that

this type of behaviours are not really good for astronauts that's why I think that humbleness is a useful attribute for an astronaut and

I do believe that astronauts are usually humbler people because they are the

good team workers. I mean you cannot be 6-months long with an arrogant personality that drives each other crazy so I do believe that this is definitely a personality trait which an astronaut should have

to be humble. What does Judit think it takes to be selected to become an astronaut?

You'll have to combine a lot of different skill sets, you have to be able to perform in a very stressful environment, you have to be able to make decisions even in life and death situations.

You have to be extremely fit both mentally and physically.

You have to be a good team worker but also a good manager, you have to be good in outreach, you have to be good in sciences,

so it combines a lot of different skill sets and it's really a huge challenge to becoming an astronaut that only very few people can be, right.

It's a complex skill set that you need to become an astronaut and so for me, it's like a good challenge to try to tackle. Judit lives in Switzerland now

she's worked in several countries before.

Judit grew up in Hungary, worked in France, moved to the US and was a research assistant studying planet formation from Space Telescope data at NASA.

Regarding diversity and inclusion Europe is lagging behind North America.

When I was working for NASA there were so many women there I don't know the official number but it felt like it was 40% women or so.

And there were people with disabilities that were underrepresented minority backgrounds, there were people of colour and so on.

And at ESA and in Europe in general you don't see that yet unfortunately so I think it's really time that ESA and in Europe, in general, we are striving for more diversity. This is very important

because only diverse teams can work well. And can you tell us about what NASA does to

keep up with diversity, like they don't just employ 40% women and

people of colour but they really work hard. Yes so for example when I was working for NASA we had yearly training on sexual harassment.

So there was a course you had to follow, then make an exam

and only then you could keep your contract or renew your contract. I think this would be for example

something very beneficial that ESA and in general European institutes could do in order to increase diversity and inclusivity interfered and discourage unprofessional behaviours.

Up to now we've talked a lot about the who and how, I want to hear what my guests relationship to the planet

and the stars actually is. Claude, please describe what it is way up there in the stars, what's your fondest memory when you think back.

Well the first one for me, one of the greatest moments was

when with my hands I was able to touch Hubble and to hold the handrail in the bottom of the Hubble Space Telescope. The Hubble has always meant so much for me.

Big telescopes in general but Hubble in particular of course.

And when 630 kilometres above the Earth's surface at 20000 km an hour outside of our spaceship Discovery

In December 99 on the 23rd of December 99, two days before Christmas, I was able to hold Hubble with my hands.

And then the work with tools in order to exchange the main computer or do brain surgery on Hubble and at the same time you do this in an environment that is unbelievable: the black sky,

the earth under you that moves rapidly, when the sun rises it rises about 20 seconds, so you go from night to

a day in about 20 seconds, the same for sunsets, you go from day to night in 20 seconds. It's always fascinating. And of course, if you like sunrise and sunset that the best job because you have 16 in one terrestrial day.

Sometimes we were stopping to work looking down: Wow, this is Egypt, this is the Red Sea, this is the Nile floodplain and this is

the Nile Delta, the Gulf of Aqaba, the Gulf of Suez, wow and we already above

the Gulf States and five minutes later we are over India, it is amazing! So in a sense, you had a biblical view on our planet. Did looking at our planet

from so far away change your attitude to our world, to the world that we're living in?

You see the world, our planet, as a unity. All the places are connected. When you are on the Earth's surface you see such a small area around you

you know, you have your city and maybe your Canton in Switzerland, your country, maybe your continents, but

up there you go from one continent to the next, from country to the next in such a short time, for me the feeling of unity of planet earth was very strong.

And of course, it's a good feeling, that would be a place to bring politicians also, the ones who run world affairs. The world is it is a very

small, fragile place, very beautiful. While Claude looked down on planet earth

Judit and I spoke about what she sees and especially how she feels when she looks up into the sky in a place like the Atacama desert in Chile.

Tranquillity, really restful and really calm.

I really like to see the stars, the Milky Way, the extra galaxies and this is one of my first

true moments when I really knew I really want to be an astronaut when I was in Chile in a telescope network when I was 18 years old and I saw

such a night sky that you cannot see anywhere else because of the light pollution.

And I really saw the Milky Way, horizon to horizon, I saw the dark clouds in it with naked eyes, saw extra galaxy such as the magellanic cloud and I was like - ja

this is really what I want to do with my future, so that was a very powerful moment for me. Judit also wants the prospective from way up in the sky.

So when did you decide to apply for the ESA job opening?

Well as you know these astronaut job openings only happen once in quite a couple of years so the previous time I was too young to even apply but I was already thinking: Hmm, once I'll be old enough to apply then I might try, so it really became

I think roughly 10 years ago when I worked for NASA and met a lot of NASA astronauts and worked in that kind of environment that I've really decided this is a very interesting challenge and it's so fascinating to be in the space

plus I'm an astrophysicist who is studying how the solar system came to be, so for me even scientifically it's a very thrilling

experience to look at our planet from the space and making such experimental the space station which can

bring us closer to understand how our planet and how the solar system came to be so that was also another reason why I really wanted to become an astronaut because it's really fitting into my research field as well.

We will see if Judit makes it to space, I hope so for her, I'd love to hear her thoughts and what it's like looking at our planet from up in the air.

Claude said the planet earth seems small and one from a distance.

I guess the concept of borders and countries is obsolete from such a distance.

Also the world of researchers is international, speaking about borders.

Maybe you remember Claude's introduction: I'm Claude Nicollier, I'm a Swiss citizen, I have been an astrophysicist and a pilot in the Air Force. Claude is the first and up to now only Swiss astronaut.

Judith is Hungarian by passport and works at the ETH.

Hungary like Switzerland is a small country and has only one cosmonaut so far.

What country is Judit actually applying for?

They asked for the passport and my passport is Hungarian which is an ESA member state so that's completely fine, you can apply for these astronaut selections. I do have a permanent residence in Switzerland and I assume that by the time I would get to the final selection that might be possible to obtain also Swiss nationality

but I think that my first nationality counts for now which is Hungarian.

If you should really hit the jackpot and become an astronaut and if ESA chooses you would that end your academic career and would it be worth it?

Well, I mean I do not have a permanent position right now in academia, I'm an on tenure track assistant professor so who knows if I'm going to have an academic career, secondly as an ESA astronaut most of the time you are in reserve

that means that you're not an active member and you can have another job as well so I don't think that it's really limiting you and plus I think it's really cool to be an astronaut I don't think that would be a loss per se, it's just a different

job also relating to the stars and planets which I like.

I'm not going to apply to become an astronaut I rather produce podcasts together with This  
Wachter's Audio Story Lab

and Luki Fretz. My name is Jennifer Khakshouri, I'm the host of the ETH podcast. Thanks for tuning  
in.

Music.