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A dark but important blot

Claude Nicollier was the first and is so far the only Swiss to have been on a space mission. In Geneva he talked to me about what it was like.

He has been higher up than any other Swiss. Claude Nicollier, who turned 50 last September, has twice been able to see the world – and of course Switzerland – from a height which we ordinary mortals know only

René Lenzin

from science fiction films or from satellite pictures. On his second trip into the depths of space he took a Swiss flag in his luggage, and he later presented it to the Swiss Abroad Museum in Geneva.

A Switzerland without lights

On that occasion Nicollier showed pictures of his second mission with the

space shuttle Endeavor which took place in December 1993. He says that circling the earth again and again is a good geography lesson. An astounding amount of things become clear from space. On one particular night he made out the lights of Turin and Milan, but to the north of them everything was dark. "Apparently they put out the lights in Switzerland at night", says Nicollier to the fact that from that height you can see practically nothing of Switzerland. Tiny Switzerland with its many mountains is a dark blot.

But not without importance for all that. Although Nicollier has lived in Houston since 1980 and works for NASA, he has maintained his close ties with Switzerland and particularly with his family. He comes back to his homeland regularly for visits and lecture tours. The Federal Institute of Technology in Lausanne has just appointed him to the rank of professor. He did not leave Switzerland because he was unhappy here but because it was too small for his particular ambition: "I would not have got so far if I had not transcended national boundaries".

This graduate in physics and astrophysics was a Swissair pilot before he went over to the European Space Agency and then to NASA, where he received training as an astronaut – the first and for many years the only European to do so! In 1992 a long period of waiting came to an end. With space shuttle Atlantis Nicollier fulfilled what had for so long been a cherished dream. Following this experience he was chosen the next year for a second space flight which was mainly devoted to repairing the Hubble telescope, a mission which was highly successful. This was not least thanks to Nicollier, whose tricky job it was to manipulate the grabbing arm with which the Hubble telescope was brought in and on which his colleagues stood while they were working out in space.

"Impressive pictures"

From this height you get what is literally a global view of things. It astounds,

but it also gives food for thought. This is how Nicollier describes the beginning of the Hubble mission on a cold December night: "After two minutes it was already day, and after 25 minutes we were flying over Madagascar in mid-summer. It is very impressive to travel from winter to summer in less than half an hour". It was also on this island off the coast of Africa that Nicollier was able to see the extent of environmental pollution and the effects of human over-exploitation of nature.

Observations such as these are not of course at the centre of space missions. Their main aims are to release satellites, to repair telescopes, to carry out scientific experiments. And all this happens under the most extreme conditions which can unnerve even the most experienced professionals: "No astronaut will tell you that he is not afraid. You have a particularly uncomfortable feeling during launch and in the first two minutes".

"Like a trip on the lake"

Earthly feelings from someone who tends to move in extra-terrestrial dimensions. The talk is of rocket speeds of 8 kilometres a second, of constellations of stars millions of light years away, of months of preparatory and simulation exercises, of working procedures in space, etc. And all this said with a casualness which led one listener to make the remark that Nicollier was recounting it all "just as if he had gone for a trip on Lake Geneva".

It is true it sounds a bit like that. But this is deceptive. Nicollier remains a pioneer – with great enthusiasm and immense ambition. This year once again he will be out in space for the third time on another shuttle; and he will once more be seeing the same view of our planet as we are showing you with our one or two pictures – with all due modesty and with reference to tiny Switzerland.

Switzerland between $1:5 \times 10^6$ and $1:25 \times 10^6$ or

Flying through the air on a magic carpet

To see things from high up, from far off, in their relativity and in their relationships, to keep yourself above the mêlée, that – to use a very good expression – is to look down from Sirius. But Sirius is far away. Very far away. Nearly nine light years away. It is too far. So I cannot see Switzerland if I look down from Sirius.

So let's reduce the distance. Let's compress the orbit. Let's go down.

And let's consult the maps... Depending on the scale, to look at a map is like going in a space shuttle, or a stratospheric balloon, or an aeroplane... Maps are miraculous things! They are at one and the same time the landscape itself and the means to fly over it. They are at once panoramas, dictionaries, telescopes and flying carpets.

Let's take a large map of Europe on a scale of 1:5,000,000. (Altitude of flying carpet: 1,000 to 5,000 kilometres).

Where is Switzerland? Ah, yes. Have to search for it. Centre of the map. Middle of Europe. Country much encircled. Has to put up with its neighbours. Territorial imperative: must have had to defend itself to keep going. Quickly in, quickly out. Transit. You can see the line of the frontier, small

black points showing a few towns. Mountain ranges. Particularly mountains. Not much more.

France, or Finland, or Spain are already imposing countries on that scale. But Switzerland, no. A small country. Sort of an island. Yes, a little country full of mountains. They must have a mentality full of slopes, ridges, passes, valleys, must the Swiss. They must admire and respect effort. Going uphill: that's labour, that's style. A bit slow, a bit heavy. Economising breath. All the peoples of the mountains, of the valleys, of the slopes, come together. They are different from the peoples of the plain. More individualist, obstinate. More suspicious at first, then afterwards more hospitable.

No big spaces, no vast plains, no ocean skies. Their big spaces are vertical, skies in altitude. They'll probably go looking for great adventures elsewhere, will the Swiss. They will expatriate themselves.

Let's go down a bit. Let's unfold a map on a scale of 1:500,000. Altitude of flight: 100 to 500 kilometres, more or less.

Oh! For goodness sake. It's very densely populated. It's like an ant heap. Between the mountains. Full of roads, towns, villages. Forests. Pastures. No big lazy-flowing river. Don't they feel a bit hemmed in? They probably do. They have to be careful not to walk on top of each other. Fences round the gardens. Orderliness. Tidy plots. Accounts. Organisation. Regulations. Must like travelling, to get some extra air, must the Swiss.

Ah, yes, the Alps! Geologically young. No rich minerals to get out of them. So no heavy industry. So they process what they import from not too far off. And then they export it again. As they don't have much room, they do it in miniature, lace-like. Machine tools, Microtechnology. A country is first and foremost a latitude. Contours. A geology.

Let's go down a bit more. National survey map on a scale of 1:50,000. Any old one taken from the pile. No. 263 – Wildstrubel. Altitude of flying carpet: 25,000 metres.

Very fine map. Excellent map-makers, these Swiss! Obviously would be, with all those mountains. They clearly like accuracy. They have precision instruments. They surely make them themselves. They wouldn't have accurate maps without them. Logical.



Aren't they likely to be a bit picky too, obsessed with the minutest details? In little countries details are always important.

Complicated contours. Like a crushed up piece of paper. Windy roads. Must know how to build bridges, those Swiss. Perhaps even bridges with bends in them. A real headache, bridges with bends in them. Calculations which go on for ever.

Let's go down even more. National survey map on a scale of 1:25,000. Another dip into the pile. No. 1346. Chanrion. Valais. Altitude of flying carpet: just above the peaks, 6,000 metres.

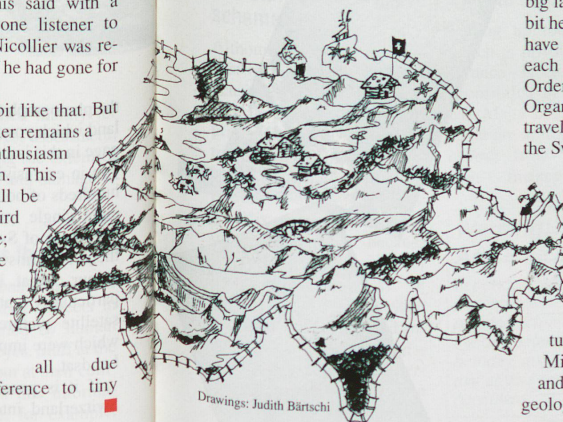
Snow. Glaciers. Water. Dams. So, hydraulic turbines on a huge scale. Complicated these turbines. Special steels. Precision machining. You have to know how to do that. They certainly don't do it only for themselves. They sell them, custom-built. Footpaths. Yes, thousands of footpaths, on the map. Incredible, the number of footpaths.

Let's look at them a bit more closely. Let's go down. Let's land the flying carpet. There, right on the Mauvoisin Dam.

And let's walk. Good boots and off in the direction of the Chanrion hut along the east bank. Three easy hours of walking. Superb. Rather slippery descent towards the moraine of the Brenay Glacier. The Swiss Alpine Club's Chanrion hut. Solid, clean, orderly. There's even a road which ends up near by.

Why on earth? Cars!! That really is a bit much... THEY'RE GOING TOO FAR! That stinks of disorderliness. It really does.

Gil Stauffer



Drawings: Judith Bärtschi