One Track, Two Stations - Proposal for Cooperation on CSS and ISS
Among chocolate, precision watches and other noble and interesting things, Switzerland is famous for its cheese with big-big holes in it. What is lesser known about Switzerland is the existence of its academic environment and space science expertise. But still, it was Professor Johannes Geiss, a Swiss scientist who drove the establishment of the International Space Science Institute in Bern.

In the late 1980s, the international exploration of Comet Halley, involving the big space agencies of that time lead to a big success but also a wealth of data. Together with his colleagues, Prof. Geiss wanted to make best use out of those collected valuable information, and looked for ways to utilise the results in an interdisciplinary way - coordinated and across the different fields of science. So what might be good for Swiss cheese - having big holes and gaps - is not at all desirable in scientific research.

Since the establishment of ISSI in Bern in 1995, several means of scientific interaction and intellectual exchange were successfully introduced. The office is open to Visiting Scientists by invitation “to work on scientific subjects at the forefront of research in areas of the international space science communities.”

But there are also International Teams formed after applications originating from an Annual Call. Typically, the International Teams are “composed of about 8-15 scientists of different laboratories, nationalities and expertise. They hold a series of two to three one-week meetings over a period of 12 to 18 months”.

Another ISSI tool are Working Groups, which “are set up for specific tasks, also of technical nature. The results of the Working Groups activities are published as volumes of ISSI Scientific Report Series or in the scientific literature”.

ISSI’s Science Committee recommends up to five topics per year, studied during a one-week long Workshop. The Workshops “can be attended by 40-45 invited scientists and experts. The results of the Workshops are published as refereed papers in issues of Space Science Reviews and in parallel as volumes of the Space Science Series of ISSI”.

And last but not least, once a year, ISSI invites 25 leading experts for a two-day Forum where “informal and free debate ... on open questions of a scientific nature or of science policy matters” can take place in Bern.

ISSI Bern’s website (http://www.issibern.ch/index.html) explains in clear and good detail the conditions and options for taking part in those activities. Also, on the website are well-sorted links to ISSI’s publications, although only the outreach publications (Annual Report, ISSI presentation, Spatium magazine) are for free download.

“I wish science could be a tool, just like sport, to break any political barrier and bring people to work together”

interview with Prof. Maurizio Falanga, Executive Director of International Space Science Institute Beijing

For the past two decades, China has been greatly looking to the stars. In 1992, China started the implementation of a strong space programme, which resulted in the development and launch of the Shenzhou spacecraft and the Long March launcher, the first taikonaut in space in 2003, as well as the orbiting space station Tiangong 1 in 2011. Meanwhile, China has sent various satellites to space, including the lunar probe Chang’e, to

On 16 July 2013, Professor Rafael Rodrigo, Executive Director of the International Space Science Institute ISSI and Professor Wu Ji, Chairman of the Board of Trustees of ISSI-Beijing and Director General of NSCC, jointly inaugurated the International Space Science Institute-Beijing. ISSI Beijing is hosted at the National Space Science Center NSSC of the Chinese Academy of Sciences CAS.

ISSI Beijing’s science publication “Taikong” (credit: ISSI/NSSC)
The success of ISSI, did not echo throughout Switzerland only. ISSI Bern earned European-wide, actually world-wide recognition. In autumn 2011, the Director General of China’s National Space Science Center, NSSC, Prof. Wu Ji visited the Bern institution and what he saw inspired him to the idea to “export” ISSI’s structure, tools and working mechanisms to Beijing. Later on he recalled: “The idea to establish ISSI-BJ goes back to my visit of ISSI Bern in October 2011. It surprised me that a small organisation, with less than 20 staff members, has such a good performance attracting nearly 1,000 top-level scientists from all over the world every year in different disciplines of space science to do cutting-edge research and to discuss the frontier topics together. Of course, my positive impression also came from the institute’s outstanding outcomes of both publications and reports, which has a significant influence on the space science communities. During this visit, I proposed the initiation of establishing a branch in Beijing. I discussed with Professor Roger-Maurice Bonnet, then the Executive Director of ISSI. We both agreed that such a new institute could contribute to the international space science community, to the development of space science in China and of course to the development of ISSI itself.”

In the “Annual Report 2013/2014 of International Space Science Institute Beijing (ISSI-BJ)” Wu Ji, describes what then followed after his trail-blazing visit.

Already in February 2012, Mr. Simon Aegenter, at that time Chair of the ISSI Board of Trustees, and Professor Roger M. Bonnet, the Executive Director of ISSI flew to China’s capital to meet Wu Ji at his home institution, the National Space Science Center (NSSC) in Beijing. Here the group discussed the implementation of ISSI in Beijing and the two parties signed a MoU for cooperation, which was approved by the ISSI Bern’s Board of Trustees in June 2012. After the adoption of the proposal in November 2012, preparation of the new institute started straight away. Wu Ji again: “In April 2013, the ISSI Bern Board confirmed the status of ISSI-BJ and agreed that ISSI-BJ can share the name, the logo and the tools with ISSI.” Just as ISSI’s tools would be shared and implemented mirroring the Bern institutional environment. But most importantly Prof. Wu stressed: “ISSI-BJ quickly became an ISSI-like institute but with its own characteristics. ... [The] new institute, the International Space Science Institute - Beijing, was inaugurated on July 16, 2013. Since then, we have seen ISSI-BJ growing well and becoming a wonderful platform for the international space science communities, which is both the objective of ISSI in Bern and also this institute in Beijing.”

While ISSI-Beijing’s first Executive Director, became Professor Maurizio Falanga, the function of the Chairman of the Board of Trustees of the International Space Science Institute Beijing, was given into the trustworthy hands of Prof. Wu Ji - a scientist who has gained extensive working experience in Europe and is like nobody else predestined and experienced to drive China’s science onto the global stage. He stated in ISSI-Beijing’s Annual Report 2013/2014: “The message I would like to impart to you here is, that what you have seen till now is just the beginning. There is still a great potential for development. On the one hand, China is developing very fast which provides great opportunities to invest in space science satellite missions. On the other hand, a fast-growing space research community in China needs to talk with their colleagues abroad. The most efficient way is to go to ISSI-BJ. For the same reason, space researchers outside of China may find new opportunities here with both missions and people. I would like to express, that everyone is welcome at ISSI-BJ. It is a purely international, and multi-lateral, platform. Science is freely discussed without disturbances. Please come to visit us and give your contributions on space science.”

For all who cannot so easily come along to Beijing, ISSI Beijing’s website is worth a side trip. One can find the download link for the Taikong magazine, published by ISSI Beijing. The Taikong brochure constitutes the output of the Forums organised at ISSI-Beijing. It reports the content of the forums.
The interview by science magazine “Nature” with physicist Pan Jianwei can be found at: http://www.nature.com/news/china-s-quantum-space-pioneer-we-need-to-explore-

The article is based on information from ISSI Bern and ISSI Beijing website and the “Annual Report 2013/2014 of International Space Science Institute - Beijing (ISSI-BJ)"

The brain behind ISSI was Swiss Professor Johannes Geiss who is a very eminent space scientist now approaching the age of 90. He was responsible for the first experiment deployed

Go Taikonauts! spoke with Prof. Dr. John Zarnecki at the 10th UK-China Workshop on Space Science & Technology in September 2015 in Newbury, UK.

GoTaikonauts!: Prof. Zarnecki, I understood that you – despite being retired – are very-very busy again?

Prof. Zarnecki: I always have listened in disbelief to those old people who claim that they have never been so busy since they retired. Now I find, that I am saying that.

GoTaikonauts!: How does it feel?

Prof. Zarnecki: I took the right decision. After having taught students for 35 years, I do, again, interesting things. I work part-time at ISSI, the International Space Science Institute. ISSI was established in 1995 in Bern, Switzerland. One of ISSI’s strengths is to bring people from all over the world together - in a multi- and interdisciplinary way – to address open scientific questions. At the end of this process which can take up to a week, the experts produce an output in the form of a scientific paper, or we have a series of books published by a renowned international science publisher.

The article is on information from ISSI Bern and ISSI Beijing website and the “Annual Report 2013/2014 of International Space Science Institute - Beijing (ISSI-BJ)" The interview by science magazine “Nature” with physicist Pan Jianwei can be found at: http://www.nature.com/news/china-s-quantum-space-pioneer-we-need-to-explore-the-unknown-1.19166