

## **All together for space research**

### **Exploring the International Space Science Institute Beijing, an Institute which brings scientists from all over the world together on behalf of space research**

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La Chine au present

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For the past two decades, China has been greatly looking to the stars. In 1992, China began to develop a strong space program, 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 lunar probe Chang'e, to explore our solar system more intensely. And future missions are already planned: the Chinese nation continues its "space dream".

However, is China working alone or is she opening up to other countries with long experience in space research and technology? To find out, we visited Maurizio Falanga, the Executive Director of the International Space Science Institute Beijing (ISSI-BJ).

#### **A platform for exchanges**

“ISSI-BJ is an international, neutral and non-profit Institute to serve the space science communities,” explains Maurizio Falanga at the very beginning. Its main objective is to deepen the understanding of space science and technology for future Chinese space missions and to study the results of passed missions through multidisciplinary research. To achieve this, the Institute organizes forums, workshops, meetings for international teams, etc.

“This year we organized eight forums, each focusing on a future Chinese space science mission. Those two-day forums, i.e. brainstorming addressed the following questions: What is the scientific interest of the mission? Which aspects should be improved? Does the mission offer the possibility to collaborate?... We invite experts from all over the world who offer their recommendations to the scientific community and the head of the mission. At ISSI-BJ, we don't make decisions: we simply gather prominent experts so that they can discuss science together.”

ISSI-BJ also extends its activities beyond its walls to reach the general public interested in space sciences. Three times a year, a popular science seminar is held at a coffeehouse in Wudaokou (in the Northwest of Beijing): “For the first seminar, we invited Prof. Roger-Maurice Bonnet. This talk was given to young students in a relaxed atmosphere at a popular coffeehouse. Prof. Bonnet and the audience highly enjoyed the topic and exchange of ideas. It was a truly exceptional experience.” In addition, the Institute has set up a summer school, in which young people from all over the world develop a space mission project together. This project enables interdisciplinary collaboration between researchers and engineers as well as intellectual exchanges with international experts. Mr. Falanga ensures the internationality of the Institute, while working closely with his Chinese colleagues. On the other hand, he values the opinion of the people

working for ISSI-BJ. “I think that the strength of the Institute is its staff itself when it contributes ideas and takes initiatives. This mindset will be strengthened in the future to become one of our major assets.”

## **Supporting China**

ISSI-BJ arose out of a close collaboration between the International Space Science Institute (ISSI) in Bern, Switzerland, and the National Space Science Center (NSSC). M. Falanga tells: “Because China is currently developing its space science program and building a scientific community, Roger-Maurice Bonnet, Executive Director of ISSI between 2003 and 2012 and Director of the Scientific Program of the European Space Agency (ESA) between 1983 and 2001, together with the Director-General of NSSC, Wu Ji, decided to create a new institution in China.” Thus, ISSI-BJ aims to be a platform for international collaboration located in Beijing, China.

The Executive Director for ISSI-BJ, Maurizio Falanga, which has been working at ISSI in Bern for several years and is familiar with the details of the institute’s operation, was quickly found to cover the position. “Currently, I spend most of my time in Bern, where my family lives, and several months per year in Beijing,” he says.

According to him, international cooperation is important for China, in order to become an equivalent player to the other international space countries. “Chinese are open to international collaboration in order to improve their space program more quickly and powerfully, without repeating what others have already done. No one can now finance a space science mission on their own because it is extremely expensive. So it is preferable to have partners.”

Indeed, a space mission requires an astronomically large budget, without usually generating revenue. It is therefore often difficult to justify the heavy investment, despite the development of the involved industries. However, a successful Chinese mission allows the country to show its high technological level. It is a source of national pride. “I must say that Chinese missions are innovative, ambitious, yet realistic,” considers Mr. Falanga. “The Chinese are contributing to international space research. The results of their missions will benefit everyone.”

When we ask Mr. Falanga if China follows a strategy which aims to cooperate with Europe to better compete with the United States, he replies: “Our Institute is not involved in industrial, economical or political strategies. But I can tell you that in science this kind of competition doesn’t exist. Science is a little bit like soccer. Regardless the nationality of the players, all target the same objective: to put the ball in the goal. As scientists, we all speak the same language, governed by mathematics and physics, with joint projects to understand our world.”

## **France, a historical partner**

Maurizio Falanga further tells that there are a few French participants for each activity organized by the Institute. “I think that France has always had a strong link with China”, he adds. Moreover, in the context of the fiftieth anniversary of Sino-French diplomatic relations, we are organizing a workshop planned for April 2015 on the topic of “cosmic gamma-ray bursts”. It results from a French proposal, but will be open to participants from other countries as well. We will also

discuss the SVOM Sino-French mission with experts like Bertrand Cordier and Diego Götz from CEA Saclay. “This mission proves that with certain countries, including France, space cooperation is not limited to scientific research, but has been expanded to the industrial and technological sectors.”

The SVOM mission, for example, was initiated by the China National Space Administration (CNSA), the Chinese Academy of Science (CAS) and the Centre National d’Etudes Spatiales (CNES). The mission focuses on the study of gamma-ray bursts, the brightest event of the universe after the Big Bang, which might tell us more in the fields of cosmology and high energy astrophysics. This mission, which will use both Chinese and French technologies, is scheduled for 2021.