

Remarks
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Yesterday, we had a very productive agency-to-agency meeting at NASA Headquarters, which covers wide range of collaborations between NASA and JAXA including the X-ray astronomy recovery mission now called XARM (charm). I am very happy that we are here together to confirm the rapid progress of the XARM mission both in Japan and in the United States. This is apparently the result of tremendous efforts of many people in NASA, JAXA, and Government of Japan after overcoming multiple difficulties. Government people still comment that the brisk approval of XARM by Government of Japan is almost miracle, since there can be what we call a punishment budget in such situation. I think that the most important factor for the positive result was the good spirit established during our long history of collaboration between NASA and JAXA over past 30-40 years.

Though we've reached the starting point, we realize that there is a huge amount of work ahead of us to be done by the joint team. I would like to emphasize that the recovery mission was made possible on the condition that ISAS will break away from its conventional approach, and we are doing our utmost to take fundamental shift from the measures in the past. As far as Japanese side is concerned, X-ray astronomy recovery mission is no longer an ISAS mission, but is a JAXA mission where all JAXA resources should be devoted to guarantee 100% success.

Let me share my small experience in working with NASA. Back in the middle of 1980, I started intimate joint work with NASA to build the soft X-ray telescope aboard Yohkoh. Dr. Hartmann was there in the US team as I remember it. Then I was involved in another joint work with NASA to build Hinode mission. I worked

with many scientists in various US institutions including Marshall and Goddard and wrote many papers with data taken by these two missions. I forgot all these papers now. But, what I remember vividly is invaluable experience with my fellow scientists and engineers in US; such as hard work to build ambitious instruments, overwhelmingly high pressure before taking the first light image, and feeling of happiness and relief as seeing the beautiful first light image taken by the instruments.

These two missions were very successful, and stimulated many many scientists in the world and space agencies, paving the way for golden age in solar physics in the subsequent 20 more years. I was very fortunate to take part in the full success two times and more.

I feel deeply sorry for the major setback caused by a mishap of the ASTRO-H satellite. At the same time, I have been hearing silent scream and desperation of people in US and in Japan who have been working for this mission over 10 years and maybe 20 years and those of young generation who had been looking forward to the data.

When facing difficulties and issues in two missions that I experienced, our colleague at NASA Headquarters always appear with reliable solutions, being considerate to the situation of the other party. My deep appreciation to NASA is based on this repeated experience. And once again, this also turns out to be the case for the ASTRO-H. People at NASA have made a bold decision to work with us again for the XARM. I know that this is not a trivial decision, and I appreciate this very much.

The other day, I read a wonderful Nature paper written primarily by the Goddard scientist, which truly shows tremendous scientific capability of SXS. I firmly believe that people involved in XARM will have full success as indicated by this superb paper paving all the way to Athena mission.

Finally, I am leaving the agency on March 31, this year after stormy 5 years with full of drama. On the following day, I will assume the position of the director general of NAOJ, which takes care of TMT on Mauna Kea, ALMA, and Subaru 8m telescope on Mauna Kea. I will miss space science, and at the same time am looking forward to the new challenge to build 30m telescope (TMT) and to expand the capabilities of ALMA and Subaru. XARM will be launched during my term, and I am very much looking forward to joint observations with XARM.

I would like to close my speech with a quote from Robert Goddard: "Just remember - when you think all is lost, the future remains." Thank you very very much.

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