

Editorial

On August 1, 2008 a total solar eclipse was visible within a narrow corridor that traversed from North America to China. The path of the Moon's umbral shadow started from Canada and extended across northern Greenland, the Arctic, central Russia, Mongolia, and China. A partial eclipse was seen within the much broader path of the Moon's penumbral shadow, which included northeastern part of North America, most parts of Europe and Asia.

At a solar physics meeting, held in Kunming, China in the fall of 2006, Professor Yi Wang, the deputy director of the National Astronomical Observatories of China (NAOC), the Chinese Academy of Sciences (CAS), and Professor Peiwen Ji, the deputy director of the Mathematical and Physical Section of the National Natural Science Foundation of China (NSFC), pointed out the importance of the 2008 total eclipse in China and provided many suggestions for the organization of the total eclipse program. Consequently several special grants from NAOC and NSFC were awarded for the August 1, 2008 total eclipse program in China.

The 2008 solar eclipse in China attracted many solar scientists in China, as well as those abroad, who in turn proposed an international workshop before the total eclipse. The first proposal of such an international solar workshop in China to be held at the then coming 2008 total solar eclipse came via email from Prof. J. Stenflo in 2007. After extensive discussions among both domestic and overseas scientists, the international workshop of the 2008 solar total eclipse was named "Solar Magnetism, Corona and Space Weather -- Chinese Space Solar Telescope Science". The workshop aimed to promote the scientific communications of scientists as well as the space solar project of the Space Solar Telescope of China (SSTC).

The Sun, a unique resolvable star, can be observed in great details. It exerts tremendous influence on our living planet - the Earth in the way of sunshine, the solar storms, solar winds and so on. The recent years have witnessed a series of achievements in the area of solar physics in China, which cover a relatively wide content of solar physics, such as the measurements and studies of solar magnetic activities, the solar flares/coronal mass ejections, the solar cycle and the relationship with space weather.

The Scientific Organization Committee (SOC) members of the workshop were G. X. Ai (China), C. Fang (China), B. Lites (USA), Z. X. Liu (China), H. Wang (USA), T. Sakurai (Japan), K. Shibata (Japan), S. Solanki (Germany), J. Stenflo (Switzerland), H. Q. Zhang (Chair, China), M. Zhang (China). Profs. S. Solanki, B. Lites, C. Fang, M. Zhang, and Professor Y. Yan of NAOC offered practical suggestions for the programs of the workshop. Most important of all, Professor Mei Zhang was responsible for the organization work of the programs. The members of Local Organization Committee were H. Q. Zhang (Chair, NAOC), M. Zhang (NAOC), Zhanao Sun (Jiuquan), Binhai Wei (Jiuquan), Y. Wang (NAOC), and X. Bao (NAOC).

The solar workshop held from July 28 to Aug. 1, 2008, at Jiuquan, Gansu Province of China mainly covered the following topics.

- 1) An overview of ancient observation to contemporary space missions;
- 2) Space and ground based results of magnetic field measurements;
- 3) Theory of magnetic fields;
- 4) Chromospheric and coronal measurements;

- 5) Understanding coronal magnetic field, coronal heating and solar wind acceleration;
- 6) Observations of eruptive events on the Sun;
- 7) Theory of eruptive events and their influence on the Earth (space weather).

Interesting talks ran through the workshop, the ancient observation of solar eclipses in China by Professor Yanben Han for instance. Talks presented by T. Sakurai, Haimin Wang, Kiyoshi Ichimoto, Yong-Jae Moon, Frank Grupp, Mei Zhang, Robert Cameron, Hiroaki Isobe, Mats Carlsson, Kazunari Shibata, Hirohisa Hara, Joerg Buechner, Yihua Yan, Jun Lin, Zuyin Pu, ranged widely from solar physics to space weather. They delivered the basic information on the development of the space solar projects abroad as well as in China. Topics included the Solar Orbiter Mission by Sami Solanki, scientific objectives of the Chinese Space Solar Telescope by Cheng Fang, the instrumentation of Space Solar Telescope by Y. Deng and H. Zhang, soft X-ray and EUV telescopes aboard Space Solar Telescope by Bo Chen, a review of Hinode results by Yoshinori Suematsu, a new perspective on quiet sun magnetism by Bruce Lites and many others.

At the 2008 total eclipse meeting, a series of public lectures were given for the public outreach in the Conference and Exhibition Center of Jiuquan City: Solar System and its Planets by Professor David C. Jewitt from University of Hawaii; Solar Activities and the Relationship with Human by Professor Sami K. Solanki of Max-Planck institute (both above lectures were translated by Professor Pengfei Chen from Nanjing University); A New View of the Universe by Professor Wenping Chen from Taipei; Solar Eruptive Phenomena by Professor Haimin Wang from NJIT; Sun - Our Star and Total Eclipse by Professor Haishen Ji from Purple Mountain Observatory; The Tools and Methods for Understanding the Universe by Professor Xiaojun Jiang of NAOC. These are believed the highest-level public lectures on the astronomical science in Jiuquan City up to now. The audience, especially the school students, were attracted by these high level lectures.

Here we offer our thanks again for the full support from the CAS and the NSFC. We are also grateful to the staff of the NAOC and the local government of Jiuquan City for their generous support.

We would also like to give readers some summary comments on the proceedings. These papers range widely in solar physics in China and also abroad in recent years, including some basic achievements on the quiet and active Sun, the total eclipse observations, the development of solar observations and the solar space projects in recent years.

At the end of this note, we extend our thanks to the referees again for their efficient work, and their valuable and helpful comments and suggestions for improving the papers in this special section of the journal, *Science in China*.

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On behalf of the Editorial Board of this issue

The international workshop of the 2008 solar total eclipse
“Solar Magnetism, Corona and Space Weather—Chinese Space Solar Telescope Science”