

# Preface

As a result of over 50 years of development, China has already built state-of-the-art full-fledged spacecraft TT&C systems. TT&C means are more diversified, their capabilities are greatly uplifted, and the scope of work of TT&C systems has been expanding. TT&C systems play an indispensable role in fields including space launch missions and routine operation management of spacecraft.

With the prosperous development of China's space endeavors, TT&C systems are facing new challenges and opportunities. They are required to support deep space missions farther into the universe. They are required to provide more complicated and higher accuracy on-orbit management of spacecraft. They are required to maintain formations and constellations of more satellites and to play a bigger role in detection and cataloguing of smaller space objects. To meet the new requirements, TT&C systems have to enhance their long-distance space information transmission capability, weak signal extraction and processing capability, high accuracy space instrumentation and navigation capability, and long delay operation and control capability. Moreover, the accuracy of TT&C systems has to be further increased to provide more reliable, secure, flexible, and efficient support to spacecraft.

Taking "wider space for TT&C" as its theme, the 27th Conference of Spacecraft TT&C Technology of China highlights more utilization of modern technologies to lift the effectiveness of spacecraft TT&C systems to meet the demands of long-term development of space activities in the backdrop of China's growing deep space missions, maturing Beidou satellite navigation system and explosive workload on China's spacecraft TT&C systems.

From over 330 papers authored by scholars and specialists from different fields, 55 are selected for publication by Springer. The objective is to further increase the

influence of the Spacecraft TT&C Committee of the Chinese Society of Astronautics and to promote international academic exchanges by sharing China's latest research achievements and engineering experiences in the field of spacecraft TT&C systems with the global space-faring community.

November 2014

Rongjun Shen

Proceedings of the 27th Conference of Spacecraft

TT&C Technology in China

Wider Space for TT&C

Shen, R.; Qian, W. (Eds.)

2015, XII, 618 p. 309 illus., Hardcover

ISBN: 978-3-662-44686-7