中 国 国 家 航 天 局

CHINA NATIONAL SPACE ADMINISTRATION

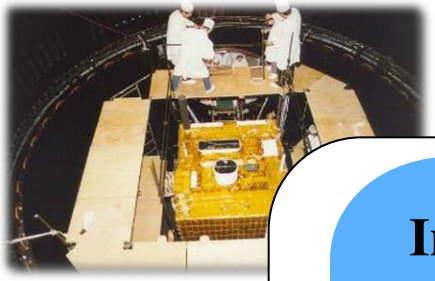
# China's Space Capacity Building

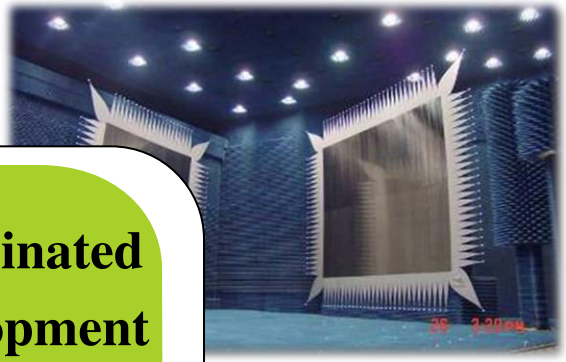
Sep. 2017 Glaz

# Key Elements of Space Capacity Building

1.National Long term sustainable development policy and strategy
2. Science & Technology Standard（STEM）
3. Industry & Manufacture Capacity
4.Space Experience (include standard & specification)
5.Space Application
6.Professionals & Training  (include undergraduate &popularization)

# Principle of China Space Activities





**Innovative Development**

**Coordinated Development**

**Subject to and serves the national overall development strategy**

**Peaceful Development**

**Open Development**

# Purposes of China Space Activities

- To explore outer space and enhance understanding of the Earth and the cosmos
- To utilize outer space for peaceful purposes, promote human civilization and social progress, and benefit the whole of mankind
- To meet the demands of economic development, scientific and technological development, national security and social progress
- To improve the scientific and cultural knowledge, protect national rights and interests, and build up overall strength

# Major Developments

- Long March vehicles greatly enhanced China's capability in access to space
- Beidou navigation system and high-resolution earth observation system progressed smoothly
- Breakthroughs was made in spacecraft rendezvous and docking , astronauts' mid-term stay in orbit, and long-term ground mission support
- Lunar exploration project achieved success in the reentry and return flight test
- Wenchang Launch Site held its first launch
- A multi-functioning TT&C network was established
- Internet plus satellite applications is coming into being
- Space science satellites offered important means for frontier scientific research
- Space debris monitoring and mitigation technology was improved and related standards and regulations were enhanced

# Major Tasks for the next five years

- To develop and launch non-toxic and pollution-free medium-lift launch vehicles； research key technologies for heavy-lift launch vehicles and develop low-cost launch vehicles
- Space infrastructure
- To launch Tianzhou-1 cargo spacecraft to dock with Tiangong-2 space laboratory； start assembly and operation of the space station
- Deep-space exploration
- To perform experiments on new space technologies

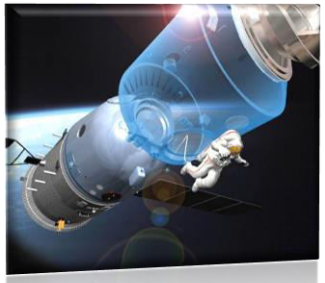
# Major Tasks for the next five years

## Three-Step strategy

First step：

Launch manned spaceships

Second step：
build a Spacelab



Humanmission (accomplished)

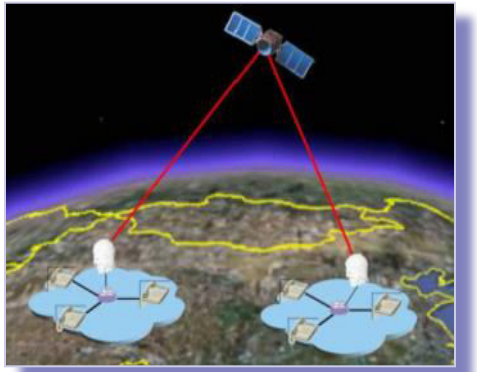
Spacelab (accomplished)

Chinese Space Station (by 2022)

Third step:
build a Space Station

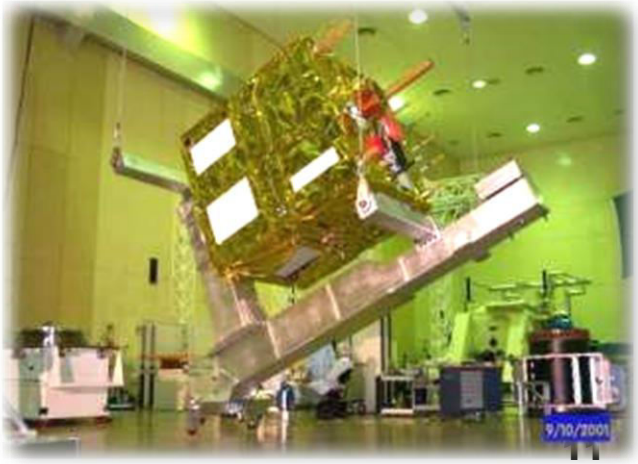
# Major Tasks for the next five years

- To improve the integrated capacities and functions of space launch sites to meet various needs
- To enhance existing space TT&C systems, and build and operate a second-generation relay satellite system; also plan to explore the development of commercial TT&C systems
- To improve space application service system, expand integrated application of space information, and improve the application and marketing of scientific and technological results.
- To implement a series of new space science satellite programs, launch a hard X-ray modulation telescope, and conduct scientific experiments in space
- To improve the standardization system for space debris, near-earth objects and space climate



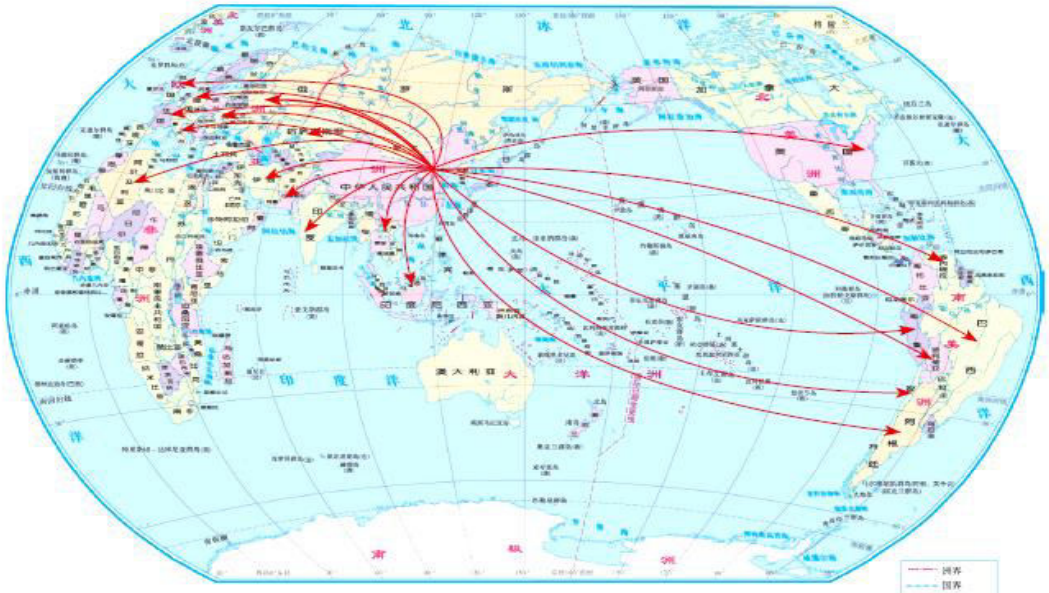
# Policies and Measures

- Arrange space activities in a scientific manner;
- Largely improve innovation capability in space science and technology;
- Promote transformation and upgrading space industries in an all-around way; accelerating satellite application industry; strengthening the legislative work; improve a diversified investment system;
- Step up training of talented space professionals;
- Strengthening popular space science education.



# International Exchanges and Cooperation

The Chinese government holds that all countries in the world have equal rights to peacefully explore, develop and utilize outer space and its celestial bodies, and that all countries' outer space activities should be beneficial to their economic development and social progress, and to the peace, security, survival and development of mankind.



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International Cooperation Network

Since 2011, China has signed 43 space cooperation agreements or memoranda of understanding with 29 countries, space agencies and international organizations.

# Key areas for future cooperation

- Construction of the Belt and Road Initiative Space Information
- BRICS 5+1 remote-sensing satellite constellation
- APSCO Joint Small Multi-mission Satellite Constellation Program and University Small Satellite Project Development
- The Moon, Mars and other deep space exploration programs and technical cooperation
- Inclusion of a space laboratory and a space station in China's manned spaceflight program
- Research and development of a space science satellite, a remote-sensing satellite, payloads, etc
- Satellite applications

ICG International Committee on Global Navigation Satellite Systems

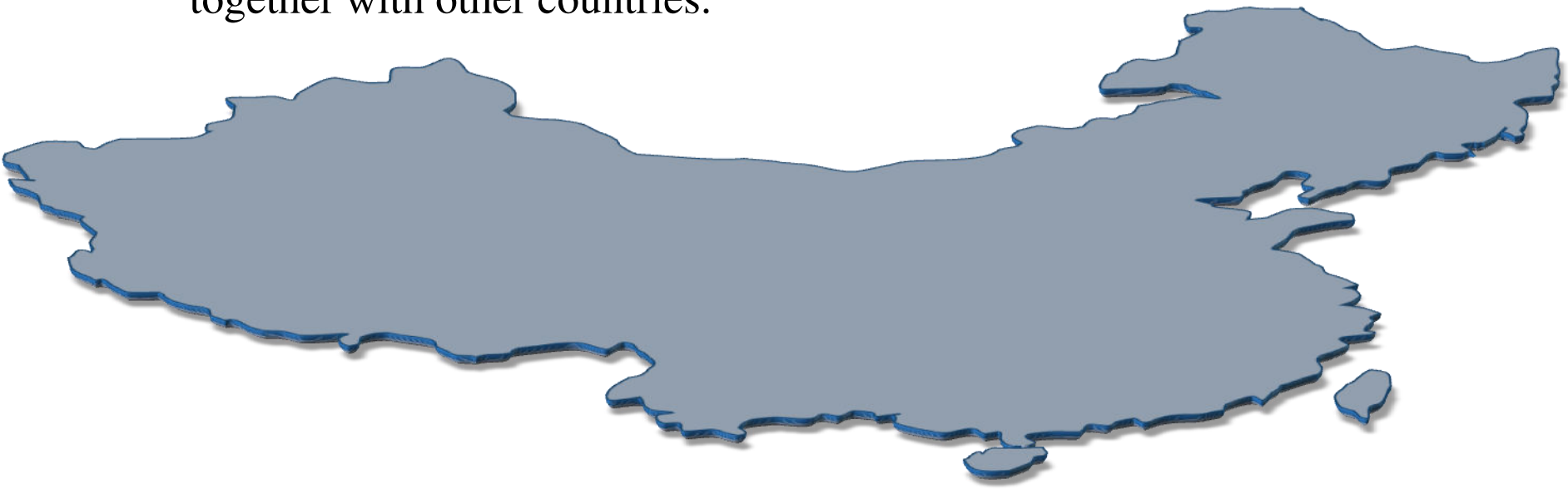
# Key areas for future cooperation

- Exploration and research on space science
- Launching and carrying services
- Space TT&C support
- Space debris monitoring, early warning, mitigation and protection
- Research on space law, policy and standards
- Personnel exchanges and training in the space field

IADC
Inter-Agency Space Debris Coordination Committee

# Conclusion

China is determined to quicken the pace of developing its space industry, and actively carry out international space exchanges and cooperation, so that achievements in space activities will serve and improve the well-being of mankind in a wider scope, at a deeper level and with higher standards. China will promote the lofty cause of peace and development together with other countries.



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# Thank You