

# Tao An: Self-introduction

- Prof. Tao AN is from the Shanghai Astronomical Observatory of the Chinese Academy of Sciences. His research interest is high resolution imaging of compact astronomical objects including black hole, jets, pulsars. More than 100 publications including *Nature Astronomy* and *Science*. [http://adsabs.harvard.edu/cgi-bin/nph-abs\\_connect?library&libname=TaoAn&libid=50c88a56b5](http://adsabs.harvard.edu/cgi-bin/nph-abs_connect?library&libname=TaoAn&libid=50c88a56b5)
- Tao is the head of SKA group in Shanghai Observatory. He is also a member of Square Kilometre Array (SKA) Regional Centre Steering Committee, and responsible for the China SKA Data Center prototype. He also serves in the International Astronomical Society (IAU) Commission B4 (Radio Astronomy), European Very Long Baseline Interferometry (VLBI) Programme Committee, and SKA VLBI SWG co-chair.
- He has been actively involved in international collaborations between China and Australian, Netherlands, SKAO.
- Tao is leading an SDP team in bridging phase: SDP prototype benchmarking.



Founding Members Sign SKA Observatory Treaty



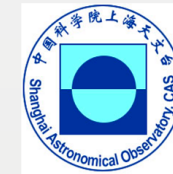
Shanghai Moves Forward With SKA Regional Centre Development

**China SKA RC precursor, supported by MOST and CAS, will provide compute and storage support to the global community.**

# SKA Regional Center precursor - ERIDANUS



Exascale Research  
Infrastructure  
For Data In Asia-Pacific  
Astronomy  
Using The SKA



SHAO led the Chinese institutions in MWA II



MoU signed btw SHAO and SKAO



MoU signed btw SHAO and ICRAR

# CHINA SKA Regional Centre preparation

- China continuously support SKA, while focus switched from Engineering to Science preparation & Data Center
- Precursor funding for China SKA RC preparation and related Science Research:
  - Ministry of Science and Technology of China: 9 M AUD
  - Chinese Academy of Sciences: 1.7 M AUD
  - Shanghai Astronomical Observatory: sponsoring MWA II operation, 1M AUD
- Objectives in 2019:
  - Finish SRC data processor prototype (1<sup>st</sup> batch)
  - Undertake SDP research task
- **May 2019: a committee panel to make decision of the first run of SKA funding in China**
- **by end of 2019: Call for proposal of the first batch SKA funding, including China SKA data centre prototype**

State SKA funding of 2 billion Chinese Yuan (**400M AUD**) for 10 years persistent support from 2020



# China SKA RC functions

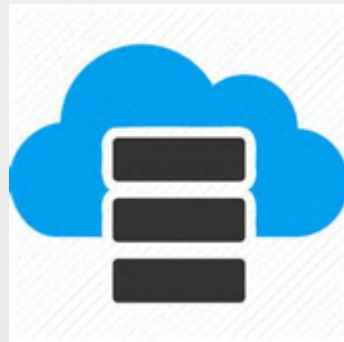
Advanced  
Technique  
R&D

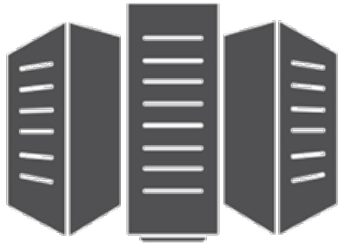
Data  
Processing  
and  
Storage

Science  
Team

Internation  
al SKA  
Colla.  
Network

Outreach





Assuming 20% of  
SKA data processing  
**100-150 Pflops**  
compute power



Store 20% SKA data  
archive  
**EByte** after 10 years



Stable >**100Gbps**  
bandwidth in SKA1

# China SKA RC activities

- 2016,
  - Shanghai, SKA SDP&HPC conference, SHAO-ICRAR, SKA Key techniques test on Tianhe-2
- 2017,
  - ERIDANUS and AENEAS initiatives, SHAO join MWA Phase II
  - 1st AU-CH SKA Big Data Workshop
- 2018,
  - Australian and China SKA SRC White book
- 2019
  - 2nd AU-CH SKA Big Data Workshop, August, Shenzhen, China
  - SKA Engineering and Operation Conference, Nov 25-28, Shanghai, China , you are welcome !

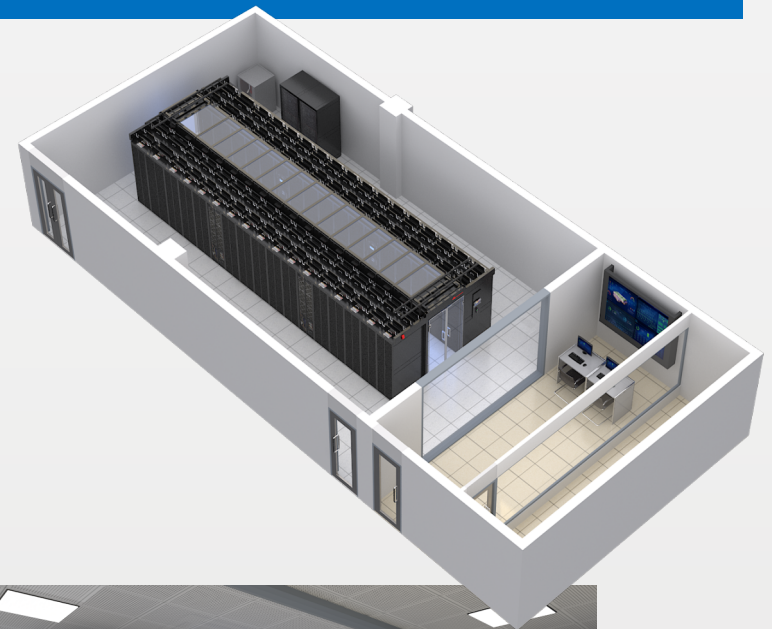


ICT deeply involves in SRC.



# SKA Data Center prototype (2019)

- The first SRC data processor, matching the requirement of SKA data-intensive compute requirement.
- Large SKA1-scale verification tests are on-going
- Once ready, it offers an affordable solution for SKA data center
- A model for future large scale deployment
- **Commissioning – 2019 Q3-Q4 welcome ! precursor data processing, software test**
- **Science product showcases in SKA Engineering - 2019 11 25-28**



## Summary

- China will build SKA Regional Center to support Chinese astronomers and also undertakes the global responsibility
- Chinese government has invested preliminary funding to support SRC precursor construction and reserved budget for long-term persistent support
- Shanghai Astronomical Observatory is leading China SRC preparation and prototype, welcome to your collaborations and contribution
- SKA Regional Center is a multi-function and open platform, supporting multi-messenger multi-discipline sciences