Introduction and Mission overview

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Joint Call for a mission from ESA and CAS

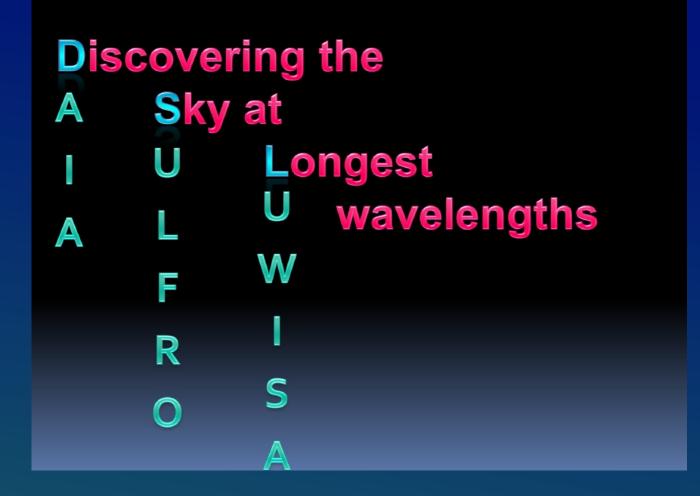
- One or two proposals will be selected as the back ground research projects for two years.
- There are 8 back ground research projects for space science in CAS.
- The joint project(s) will be 9th (and 10th) back ground research project(s), but in an independent queue.
- The final decision will be made by both sides together in 2017.

The first workshop for a mission from ESA and CAS was help in Chengdu, China on Feb. 24-26, 2014

A workshop for ultra low frequency on th August 14-15, 2014,

Then more detail discuss for the joint proposal in Beijing during URSI meeting on August 21, 2014.

The second workshop for a mission from ESA and CAS was help in Copenhagen, on Sept. 23-25, 2014



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DSL major specifications

- Wavelength/frequency range:
 - mandatory: 300 10 m
 - desirable: 1 km 10 m 300 kHz 30 MHz
 - optional: 3 km <10 m 100 kHz >30 MHz

1 – 30 MHz

Imaging capability:

- mandatory: Dynamic Range (DR) 300:1
- desirable: DR 1000:1 (or confusion-limited)
- optional: DR>3000:1 (or confusion-limited)
- Spectral resolution, $f/\Delta f \ge 250$

<u>Prime</u>: pioneering studies in the hitherto unexplored window of the cosmic EM spectrum

- Full sky continuum **survey** of discrete sources:
 - Ultra-steep spectrum extragalactic sources
 - Pulsars?
 - Transients (galactic and extragalactic)
- Full sky map of (galactic) continuum diffuse emissio
- Search for signatures of Dark Ages
- Recombination radio lines (of "macro-atoms")?
- Search for "exo-Jupiters"
- Solar-terrestrial physics
- Radio-showers from high-energy particles (and neutrinos) interacting with Moon

Above all, a lesson of science history:

• Discovery of unknown

A series teleconferences for DSL were held after the Copenhagen meeting.

A f2f meeting was held in Shanghai on Jan. 6, 2015.

I think we are on the right direction and have to go ahead for the hard jon.



DSL team - China

 NSSC (National Space Science Center), CAS: Jingye Yan, Jianhua Zheng, et al.

 NAOC (National Astronomical Observatory), CAS:
Xuelei Chen, Maohai Huang, Linjie Chen, Fengquan Wu, Mo Zhonag, Xiangping Wu, Yihua Yan, Di Li,, et al.

- SHAO (Shanghai Astronomical Observatory), CAS: Xiaoyu Hong, Tao An, Willem Baan, Weimin Zheng, Zhiqiang Shen, Qinhui Liu, et al.
- SECM (Shanghai Engineering Centre for Microsatellites), CAS: Shufan Wu, Wen Chen, et al.
- SISE (Shanghai Institute of Satellite Engineering): Zhiyu Cao, Xinbo Zhu, Wei Wang, et al.

