

Cover Story

CAS released in early July four more space missions for science explorations, with focuses on the origin and evolution of the cosmos, and solar-terrestrial physics. Scheduled to fly around 2022, the missions are expected to detect messages from the drastically changing part of the universe: black holes devouring stars, merging pairs of neutron stars or black holes, and the burning flares and corona of the Sun...

For more information, please refer to page 70.

BCAS

Vol.32 No.2, 2018 Pages 65 – 128

Editor-in-chief
BAI Chunli
Executive Vice Editor-in-chief
ZHANG Tao
Vice Editors-in-chief

Mu-ming Poo, LI Guojie, FU Bojie, GUO Huadong, TAN Tieniu, WANG Keqiang, WANG Xingdong

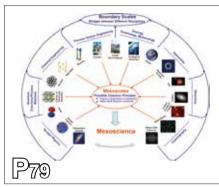
Editor
SONG Jianlan
Associate Editors
GUO Haiyan
XIN Ling
Design & Layout
YUAN Miao

General Editorial Office Tel/Fax: 86-10-62542631 Email: bulletin@mail.casipm.ac.cn P.O. Box. 8712, Beijing 100190, China

Sponsored by the Chinese Academy of Sciences Published by Science Press Domestic subscription (1 year): 400 yuan.

The views expressed in the *Bulletin of the Chinese Academy of Sciences* are those of the authors, and are not necessarily those of the Academy or the editors.

Contents



An international panel of scientists call for more attention to and studies in mesoscience, an emerging approach of research looking into the world between the micro- and macro-scales to address heterogeneity in complex systems.

InBrief =

- 66 President XI Calls for Building China into World Science and Technology Leader
- 67 Foreign Scientists Attracted to Work Longterm in China
- 68 Institute of Physics Celebrates 90th Anniversary
- 69 Three CAS Researchers Receive Tan Kah Kee Young Scientist Award

InFocus **•**

- 70 CAS Unveils New Space Missions Locking on Origin and Evolution of Cosmos, and Solar-Terrestrial Physics
- 77 Lunar Far-side Mission Offers Rare Opportunities for Radio Astronomy

Perspective

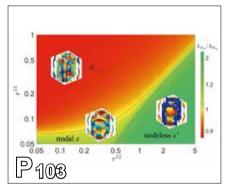
79 Mesoscience: Peering into a Once Neglected World



Shuhrat Ehgamberdiev talks about how Chinese and Uzbek scientists work together to upgrade the 1 m Zeiss telescope at Maidanak Observatory and his visions for future collaboration.



Dutch astronomer Richard de Grijs enjoyed his eight years in Beijing as a research professor and "ambassador" between Chinese and international astronomical community. Though he has moved to Australia, he will go on to "advocate for Chinese science."



A team at the Institute of Physics, CAS reported a new pairing mechanism for heavy fermion superconductivity in CeCu₂Si₂, solving the discrepancy between recent experimental observations and theoretical predictions.

......

Int'l Cooperation

- 87 Work Together to Revive the Great Traditions of Chinese and Uzbek Astronomy
- 93 An Astronomer's Encounter with Beijing

Science Watch

Basic Science

- 98 New Study Denies Dark Matter's Role in Dwarf Galaxies
- 100 First Detection of Millisecond Pulsar by FAST Telescope
- 101 New Evidence for Gas-Rich Merger Origin of Galactic Thick Disk
- 102 Mixing Between Two Light Scalar Mesons Observed at BESIII
- 103 Finding New Pairing Mechanism for Heavy Fermion Superconductivity
- 105 Nano-Kirigami: A Nanoscale "Paper-cut" Developed For 3D Intelligent Nanofabrication

Life Sciences

- 107 Seeing the Forest before the Trees: Researchers Uncover Novel Brain Mechanisms Preserving Vision with High Resolution
- 109 Identification of MYORG as a New Causative Gene for Primary Familial Brain Calcification
- 111 Role of Nuclear Import Pathway in Epigenetic Silencing Identified
- 112 Scientists Unravel the Mysteries of Human Embryogenesis and Evolution

- 113 In vivo CRISPR Screening Unveils Important Tumor Suppressor Gene in Lung Tumorigenesis
- 114 Mechanism and Predictor of the Clinical Efficacy of Psychosurgery in Severe Obsessive-Compulsive Disorder
- 116 Benefit of Giant Panda Conservation Far Exceeds Cost, Experts Say
- 117 A New Species of Birthwort Found in South China

Earth Sciences

118 Song from The Distant Past: A New Fossil Pheasant from China Preserves A Super-Elongated Windpipe

Energy and Environment

- 120 Cultivating Orchids May Help Conserve Wild Species in China
- 121 New Estimates of Carbon Pools in China's Terrestrial Ecosystems
- 122 Precipitation Decline Significantly Reduces Productivity of Savannas

Technology

- 123 New Method to Modulate Surface Properties of Black Phosphorus
- 124 Full Field-of-view Endoscopic System for Early Detection of Gastrointestinal Cancer

Psychology

- 126 Understanding Anhedonia
- 128 Social Mistrust Is Heritable in Chinese Children and Adolescents, Study Shows