

P71

Cover Story: On July 23, *Tianwen-1*, the first Mars explorer of China, embarked on its journey. The Chinese Academy of Sciences, having played a crucial role in setting the scientific goals for China's Mars Exploration Program, is now seeing to the smooth implementation of the program in cooperation with partners. For more please refer to page 71. (Image credit: CNSA)

BCAS

www.bcas.cas.cn

Vol.34 No.2, 2020

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, YANG Liuchun

Editor

SONG Jianlan

Associate Editors

GUO Haiyan

YAN Fusheng

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

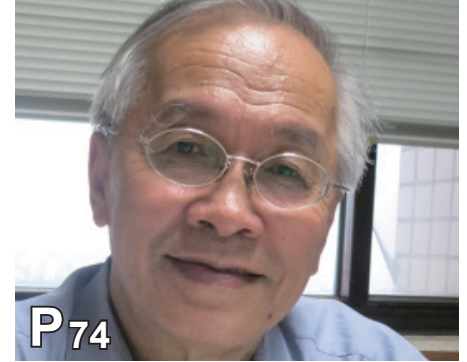
Sponsored by the Chinese Academy of Sciences
Published by Science Press
Printed by Beijing Reach Mine Printing CO., LTD.

Domestic subscription (1 year): 400 yuan.
Domestic and overseas distribution: Science Press

Launched in 1987, the *Bulletin of the Chinese Academy of Sciences (BCAS, ISSN 1003-3572)* is a quarterly published every March, June, September and December. Copyright © 2020 by the Chinese Academy of Sciences. Please note that the views expressed in *BCAS* are those of the authors, and are not necessarily those of the Academy or the editors. For subscription, please contact Science Press at +86-10-64017032, mazhiyong@mail.sciencep.com.

BCAS has licensed CNKI to digitally copy, compile, publish, and disseminate the full text of our journal by network. The remuneration paid by our journal includes the copyright fee of CNKI. All authors who submit articles to our journal for publication are deemed to agree with the above statement. If there is any objection, please indicate at the time of submission, we will deal with it accordingly.

Contents



P74

Prof. Wing-Huen Ip, newly-appointed Executive Director of ISSI-BJ, shares how the young institute is to secure the progress of transdisciplinary and transcultural cooperation in space science, amid the COVID-19 pandemic.

66 In This Issue

InBrief

69 Disinfection Threatens Aquatic Ecosystems

69 SARS-CoV-2 Infection in Human ACE2 Transgenic Mice

70 Neutralizing Antibody Enters Phase I Clinical Trial

InFocus

71 Flying to Mars

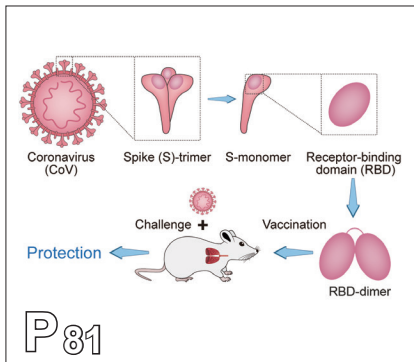
People

74 Promoting Transdisciplinary and Transcultural Cooperation in Space Science in Face of COVID-19

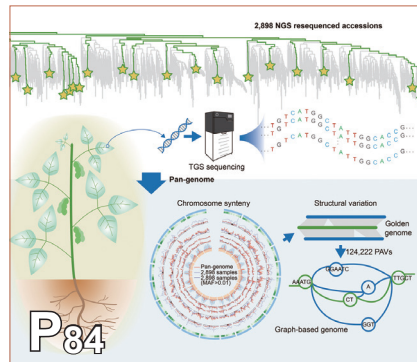
Special

78 Neutralizing Antibodies Block COVID-19 Virus Binding to Its Receptor ACE2

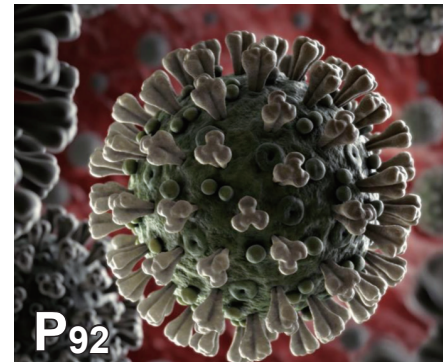
81 Targeting COVID-19, MERS, and SARS with a Universal Vaccine Strategy



Scientists developed a universal vaccine strategy against COVID-19, MERS, and SARS through dimerizing the key antigens.



A comprehensive genomic map that contains almost all the genetic information of soybeans around the world is expected to benefit the upcoming efforts in soybean breeding.



Reviewing anti-epidemic measures taken in urgent response to the outbreak of COVID-19, experts share experience gained in China's battle against the virulent disease.

Highlights

- 84 Constructing a Genomic Map for All Soybeans
- 87 Engineering Native Proteins into Covalent Drugs

Perspective

- 92 Fighting against COVID-19: Experience from China's Practice

ThinkTank Report

- 95 Recommendations to Address Structural Problems in China's Basic Research

Science Watch

Basic Research

- 102 Progress in Superconducting Quantum Computation: Quantum Simulation of Dynamical Phase Transitions
- 104 Quantum Phases of $\text{SrCu}_2(\text{BO}_3)_2$ from High-Pressure Thermodynamics
- 106 Confinement Leads to Spatially Oscillatory Collective Motion of Chiral Active Matter
- 108 CAS Astronomers Find Chromospheric Apparent Fan-shaped Jets Nearby Sunspots

- 110 Supermassive Binary Black Hole Hunter: SKA Pulsar Timing Array
- 111 Black Hole's Heart Still Beating
- 113 BESIII Reports the Most Precise Measurements of Strong-phase Parameters in $D \rightarrow K_S \pi^+ \pi^-$
- 115 Single Chromium Atoms for Direct Methane Conversion

Life Sciences

- 116 Distinct Processing of lncRNAs Contributes to Non-conserved Functions in Stem Cells
- 118 Using Morphology and Phylogeny to Characterize and Classify Fungi: Fungal Diversity Notes
- 120 Rice Genetically Engineered to Stand Heat Stress is also More Productive
- 122 New Cytosine Base Editors with High Specificity and Precision

Earth Sciences

- 124 How Birds Survived the Cretaceous Mass Extinction: Secret Hidden within Their Tiny Teeth
- 126 Ancient DNA Unveils Important Missing Piece of Human History New Ancient Genomic Research Reveals Information about Human history in China