

4th CAS-NAS Forum for New Leaders in Space Science

Space Studies Board
National Academies of Sciences,
Engineering and Medicine

National Space Science Center
Chinese Academy of Sciences

FINAL PROGRAM

May 16-17, 2016

Huntington Room
100 Academy Drive

Beckman Center
Irvine, California

Monday, May 16

- 7:45 a.m. Meet in Lobby of Fairmont Hotel for transport to Beckman Center
- 8:00 a.m. Breakfast Beckman Center Dining Room and Terrace
- 9:00 a.m. Welcome to the Fourth Forum Robert Braun
Georgia Institute of Technology
- 9:05 a.m. Current Activities of the Space Studies Board Michael Moloney
National Academies of Sciences
Engineering and Medicine
- Earth Science from Space Session 1** Session Chair Byron TAPLEY
- 9:30 a.m. Hydrologic Extremes: Challenges in Forecasting Soroosh SOROOSHIAN
Floods and Predicting Droughts University of California, Irvine
- 10:00 a.m. Break
- 10:30 a.m. Global Mapping of Land Surface Soil Moisture Tianjie ZHAO
from the Water Cycle Observation Mission CAS Institute of Remote Sensing
and Digital Earth
- 11:00 a.m. Sea Surface Wind and Ocean Waves in Extreme Weather Xiaobin YIN
CAS National Space Science Center
- 11:30 a.m. A Novel Push-Broom Type Multi-Frequency Hao LIU
Microwave Interferometric Radiometers CAS National Space Science Center
For Ocean and Land Surface Observation
- 12:00 p.m. Lunch Beckman Center Dining Room and Terrace

Earth Science from Space Session 2

Session Chair Charles KENNEL

- 1:30 p.m. Gravity as a Monitor of Earth-System Mass Change Byron TAPLEY
University of Texas
- 2:00 p.m. Post-Newtonian Reference Ellipsoid Wenbiao HAN
CAS Shanghai Astronomical Observatory
- 2:30 p.m. Assessing Solar-Induced Chlorophyll Fluorescence Ying SUN
In Monitoring and Early Warning of Flash Drought Jet Propulsion Laboratory
Over the US Great Plains
- 3:00 p.m. Break

Planetary Science Session 1

Session Chair Robert BRAUN

- 3:30 p.m. Toward Reliable Biosignature Detection in Feng TIAN
Exoplanetary Atmospheres Tsinghua University
- 4:00 p.m. Lake-Forming Climates on Mars: Cadence and Cause Edwin KITE
University of Chicago
- 4:30 p.m. Characteristics and Origin of Sinuous Ridges on Jun HUANG
Solis Planum, Mars China University of Geosciences
- 5:00 p.m. Examining Non-Equilibrium Effects on Subsurface Orenthal J. Tucker
Gas Flow and Grain Acceleration in Enceladus Vents University of Michigan
- 5:30 p.m. Group Photograph All Participants
- 5:45 p.m. Assemble outside Beckman Center for transport to dinner
- 6:30 p.m. Dinner Las Brisas
361 Cliff Drive
Laguna Beach
CA 92651
949-497-5434
- 8:30 p.m. Meet outside Las Brisas for transport back to Fairmont Hotel

Tuesday, May 17

- 7:45 a.m. Meet in Lobby of Fairmont Hotel for transport to Beckman Center¹
- 8:00 a.m. Breakfast Beckman Center Dining Room and Terrace
- 9:00 a.m. Current Status of CAS Space Science Missions Ji WU
CAS National Space Science Center

Earth Science from Space Session 3

Session Chair Ji WU

- 9:30 a.m. The New Policy and Science of Climate Risk Charles KENNEL
University of California, San Diego
- 10:00 a.m. Break
- 10:30 a.m. Introduction to the Water Cycle Observation Mission Jiancheng SHI
CAS Institute of Remote Sensing
And Digital Earth
- 11:00 a.m. Global Distribution of Water Vapor and Cloud Cover from Space Missions Meng SU
MIT and Harvard University
- 11:30 a.m. General Discussion of Earth Science Presentations All Participants
- 12:00 p.m. Lunch Beckman Center Dining Room and Terrace

Planetary Science Session 2

Session Chair Feng TIAN

- 1:30 p.m. Understanding the Surface Properties of Mars, Asteroids and Europa using Thermophysical Measurements Philip CHRISTENSEN
Arizona State University
- 2:00 p.m. Internal Structures of Near-Earth Asteroids From Ground- and Space-Based Observations Michael BUSCH
SETI Institute
- 2:30 p.m. Remotely Determining the Composition of Phobos and Deimos, and Implications for their Formation and Future Exploration Abigail FRAEMAN
Jet Propulsion Laboratory
- 3:00 p.m. Break

¹ CAS participants departing on flight CA984 staff should check out of the Fairmont Newport Beach Hotel prior to departure for Beckman Center. Take your luggage with you to the Beckman Center. A bag room is available at the Beckman Center.

Planetary Science Session 3

Session Chair Philip CHRISTENSEN

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|-----------|---|---|
| 3:30 p.m. | MAG: A Precision Digital Fluxgate Magnetometer for the SMILE Mission | Jindong WANG CAS National Space Science Center |
| 4:00 p.m. | Spectroscopic Investigations of Primary and Altered Impactites | Rebecca GREENBERGER Jet Propulsion Laboratory |
| 4:30 p.m. | H and Cl Isotopes Composition of Apatite in Lunar Meteorite Dhofar 1442 | Qin ZHOU CAS National Astronomical Observatories |
| 5:00 p.m. | Preparing for Sample Return: New Perspectives on the Distribution of Mare and Cryptomare in the South Pole-Aitken Basin | Ryan CLEGG-WATKINS Washington University |
| 5:30 p.m. | General Discussion of Planetary Science Presentations | All Participants |
| 6:00 p.m. | Impressions of the Third and Fourth Forums | All Participants |
| 6:30 p.m. | Reception and Barbecue | Beckman Center Dining Terrace |
| 9:00 p.m. | Adjourn | Bus to LAX departs from Beckman Center |

NOTES

Emergency Contact Number: If you need to contact DHS² on May 14 or 15 call or send a text message to +1-571-830-0429.

Beckman Center: Is located on the campus of the University of California, Irvine, and is approximately 4 km from Orange County/John Wayne Airport. See the following website for more information, including directions: <http://www7.nationalacademies.org/beckman/>

Hotel: A block of rooms has been reserved for the forum's use at the Fairmont Newport Beach Hotel, 4500 MacArthur Boulevard, Newport Beach, CA 92660 (+1-949-476-2001, +1-949-476-0153(fax)). Additional information, including directions can be found at the following website: <http://www.fairmont.com/newport-beach/>. This hotel is located adjacent to John Wayne/Orange Country Airport and is about 4 km from the Beckman Center.

CAS Group Arriving at LAX on noon on Sunday: Those arriving from Beijing on CA987 at about 12:00 p.m. on Sunday, May 15, will be met at the airport by DHS² and then directed to a bus to take you to the Fairmont Hotel. If you don't see me, get separated from the rest of the group, or have some other mishap send a text message to DHS² at +1-571-830-0429. If your plane is on time, you don't get stuck in immigration or customs and there are no holdups on the freeway to Newport Beach, expect to check-in at the Fairmont Hotel at about 2:00 p.m. If you get stranded at LAX and cannot reach DHS² take a taxi to the Fairmont Hotel.

Other CAS Arrival Details: See table. Those arriving at Orange County John Wayne Airport (SNA) should see the Fairmont Hotel shuttle bus details (below).

US Participants Arrival: If arriving at Orange County John Wayne Airport (SNA), take taxi or see Fairmont Hotel shuttle bus details below. If you arrive at Los Angeles International Airport (LAX) take the Super Shuttle to the Fairmont Hotel. DHS may be able to help you if you arrive at LAX on Sunday morning.

Sunday Afternoon Excursions: There will be limited (and informal opportunities) for exploring the local area (e.g., Newport Beach, Laguna Beach or balboa Island) and/or shopping (e.g., in Fashion Island or the South Coast Plaza) on Sunday afternoon. We are meeting in the capital of "car culture;" you cannot really get anywhere very far on foot. Those interested in venturing out from the immediate vicinity of the hotel should rendezvous in the lobby of the Fairmont Hotel at 4:00 p.m. The extent of the excursions will depend on the number of cars available and so the assistance of those U.S. participants with cars is greatly appreciated. The Fairmont Hotel's shuttle bus that can provide some limited local transport.

Sunday Dinner: No formal arrangements have been made for a group dinner on Sunday May 15, so you are on your own. The restaurant at the Fairmont Hotel is quite good.

Monday/Tuesday Breakfast and Lunch: Available to all Forum participants in the refectory at the Beckman Center.

Monday Dinner: All participants in the Forum are invited to dinner on Monday May 16 at Las Brisas, 361 Cliff Drive, Laguna Beach, CA 92651 (Tel. 949-947-5434). More information about Las Brisas can be found at: <http://www.lasbrisaslagunabeach.com/>.

² David H. SMITH

Tuesday Dinner: All participants in the Forum are invited to attend the farewell barbecue on the Beckman Center's Dining Terrace on Tuesday May 17.

Parking: There is plenty of free parking at the Beckman Center. The Fairmont Hotel only offers valet parking. There is only valet parking at Prego.

Airports: Orange County/John Wayne Airport (SNA) is about 1 km from the Fairmont Hotel and 4 km distant from the Beckman Center. Los Angeles International Airport (LAX) and Long Beach Airport (LGB) are 64 km and 40 km distant, respectively.

Return Bus to LAX: Those CAS participants planning to return to Beijing on CA984 departing from LAX at 01:40 a.m. on Wednesday May 18 should check out of the Fairmont Hotel on Tuesday May 17 prior to departing for the Beckman Center. You can leave your luggage in the baggage room at the Beckman Center. The bus to LAX will depart from the Beckman Center at 9:00 p.m.

Other CAS Departure Details: See table.

US Participants Departure: Take Fairmont Hotel shuttle bus (see below) or taxi to Orange County John Wayne Airport. Take Super Shuttle to Los Angeles International Airport.

Internet Access: Free visitor access is available via the Beckman Center's wifi system. The Fairmont hotel charges for internet access. However you can obtain free access if you join the Fairmont President's Club. Joining is free. You can enroll at <https://www.fairmont.com/fpc/enroll/>. Membership has other perks such as express check-in/departure and free newspaper delivery.

Fairmont Hotel Shuttle Bus for SNA Arrivals: Once you have collected your luggage in the arrival hall, proceed outside Terminal B. Go to the second island and look for sign, "Ground Transportation (Hotel Courtesy Shuttles/ Taxi)." Call the Fairmont Hotel Valet desk (949-476-2001), give your name and ask to be picked up. A driver will collect in 10-15 minutes.

Fairmont Hotel Shuttle Bus for SNA Departures: The hotel's shuttle bus departs for Orange County John Wayne Airport on the hour and half hour. Reservations are not necessary. Wait outside the hotel lobby 10 minutes prior to your preferred departure time. The Doorman/Valet will escort you to the proper departure vehicle and provide luggage assistance.

Chinese Delegation Arrival Details

| Name | Originating City | Arrival Flight Airline | Arrival Flight Number | Arrival Flight Date | Arrival Flight Time | Arrival Arrangements |
|---------------|------------------|---------------------------|-----------------------------|---------------------------|---------------------------|--|
| Wenbiao HAN | Shanghai,China | China Eastern Airlines | MU583 | Sunday, May 15 | 10:05 | DHS will meet him at arrival and keep him entertained until the main group arrives |
| Ji WU | Beijing, China | Air China | CA987 | Sunday, May 15 | 12:00 | DHS will meet group at arrival and bus will take them to hotel |
| Hao LIU | Beijing, China | Air China | CA987 | Sunday, May 15 | 12:00 | |
| Jindong WANG | Beijing, China | Air China | CA987 | Sunday, May 15 | 12:00 | |
| Xiaobin YIN | Beijing, China | Air China | CA987 | Sunday, May 15 | 12:00 | |
| Tingting SONG | Beijing, China | Air China | CA987 | Sunday, May 15 | 12:00 | |
| Jiancheng SHI | Beijing, China | Air China | CA987 | Sunday, May 15 | 12:00 | |
| Tianjie ZHAO | Beijing, China | Air China | CA987 | Sunday, May 15 | 12:00 | |
| Bolun NING | Beijing, China | Air China | CA987 | Sunday, May 15 | 12:00 | |
| Feng TIAN | San Francisco | United Airlines | UA1909 | Sunday, May 15 | 12:14 | See instructions above for Fairmont Hotel Shuttle Bus for SNA Arrivals |
| Qin ZHOU | Beijing, China | Air China | CA983 | Sunday, May 15 | 18:00 | Arranging for SuperShuttle to take her to hotel from LAX. Details have already been sent |
| Jun HUANG | / | / | / | / | / | He is already in the US and will drive to meeting place by himself |

Chinese Delegation Departure Information

| NAME | Originating City | Departure Flight Airline | Departure Flight Number | Departure Flight Date | Departure Flight Time | Departure Arrangements |
|---------------------------|------------------------------|------------------------------|-------------------------|-----------------------|-----------------------|--|
| Ji WU | Los Angeles | Air China | CA984 | Wednesday, May 18 | 1:40 | Shuttle bus will collect from the Beckman Center at about 21:00 on Tuesday 17 May and take them to LAX |
| Hao LIU | Los Angeles | Air China | CA984 | Wednesday, May 18 | 1:40 | |
| Jindong WANG | Los Angeles | Air China | CA984 | Wednesday, May 18 | 1:40 | |
| Xiaobin YIN | Los Angeles | Air China | CA984 | Wednesday, May 18 | 1:40 | |
| Tingting SONG | Los Angeles | Air China | CA984 | Wednesday, May 18 | 1:40 | |
| Jiancheng SHI | Los Angeles | Air China | CA984 | Wednesday, May 18 | 1:40 | |
| Tianjie ZHAO Feng TIAN | Los Angeles ORANGE COUNTY | Air China United Airlines | CA984 UA322 | Wednesday, May 18 | 1:40 8:00 | See instructions above For Fairmont Hotel Shuttle Bus for SNA Departures |
| Qin ZHOU | Los Angeles | Air China | CA988 | Wednesday, May 18 | 14:20 | DHS will take these three to LAX with him. Will need to depart hotel at about 10:00 |
| Bolun NING | Los Angeles | Air China | CA988 | Wednesday, May 18 | 14:20 | |
| Wenbiao HAN | Los Angeles | American Airlines | AA1258 | Wednesday, May 18 | 15:42 | |
| Jun HUANG | / | / | / | / | / | Will take care of himself |

Beckman Center Floor Plan

