



Discovering a Whole New World

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Outline



- Background
- Introduction
- After PNST
- Hands-On Experience
- Involvement in Satellite Projects
- Special Guest Lectures
- Research and Outreach
- Life in Japan



Where I come from?



- Area : 38,394 Sq. km
- Population : 727,145 (Source :Population and Housing Census of Bhutan 2017)
- Landlocked between India and China



Bhutan's Development Timeline



1999
Introduction
of TV and
Internet



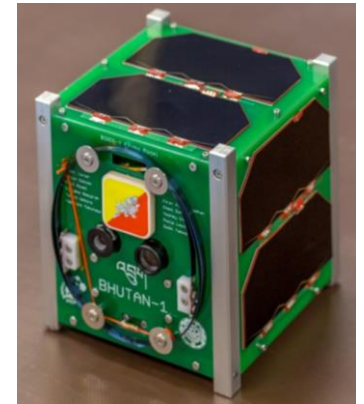
Inauguration of Television in 1999
<https://bhutantourisms.wordpress.com/>

Aug, 2018
BHUTAN-1 deployed
from ISS

1961
First 5 year
Plan

2003
Introduction
of Cellular
Mobile
Services

October 2016
Bhutan joined
BIRDS-2
Project



Space

Bhutan to launch its first satellite in 2018

Around USD 280,000 will be spent on the effort

Kuensel dated 21 October 2016



Before PNST



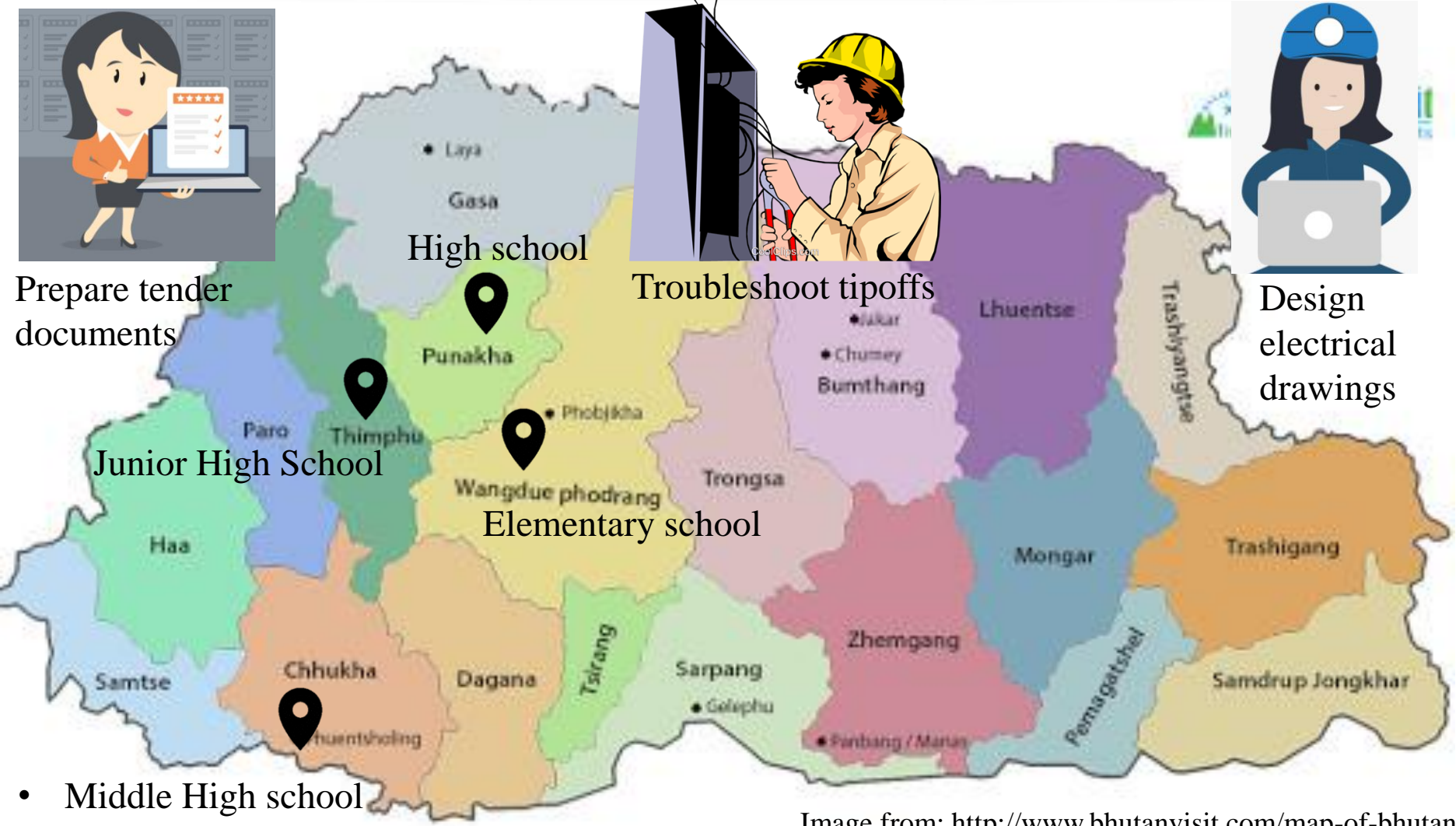
Prepare tender documents



Troubleshoot tipoffs



Design electrical drawings



- Middle High school
- Bachelors

Image from: <http://www.bhutanvisit.com/map-of-bhutan/>



After PNST



Lab Members

Entrance Ceremony, 2017

Students specialize in:

- **Ground station operations**
- **Structure and Thermal designs**
- **Programming**
- **PCB designs**
- **Material Science**
- **Project Management**



Student room, LASEINE



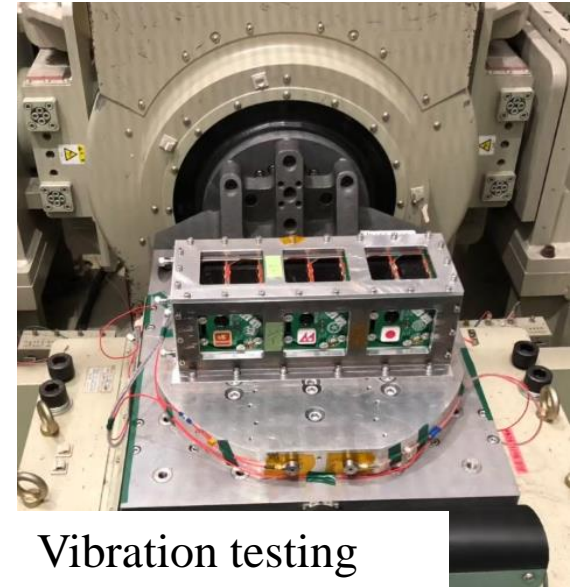
Hands-on Experience



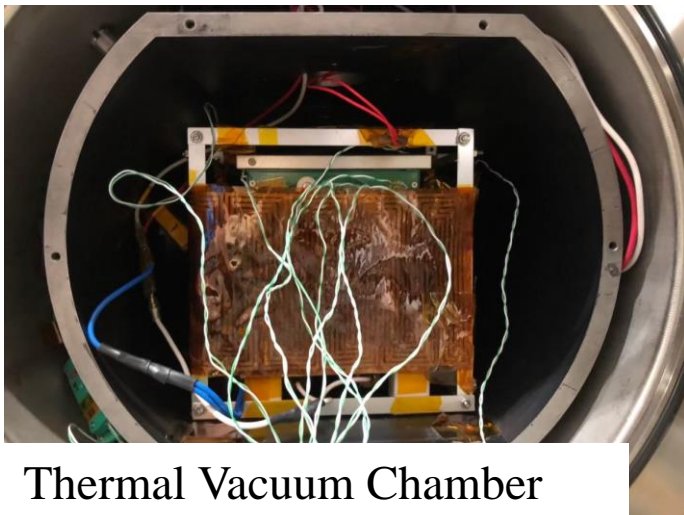
Anechoic Chamber



Solar Simulator



Vibration testing



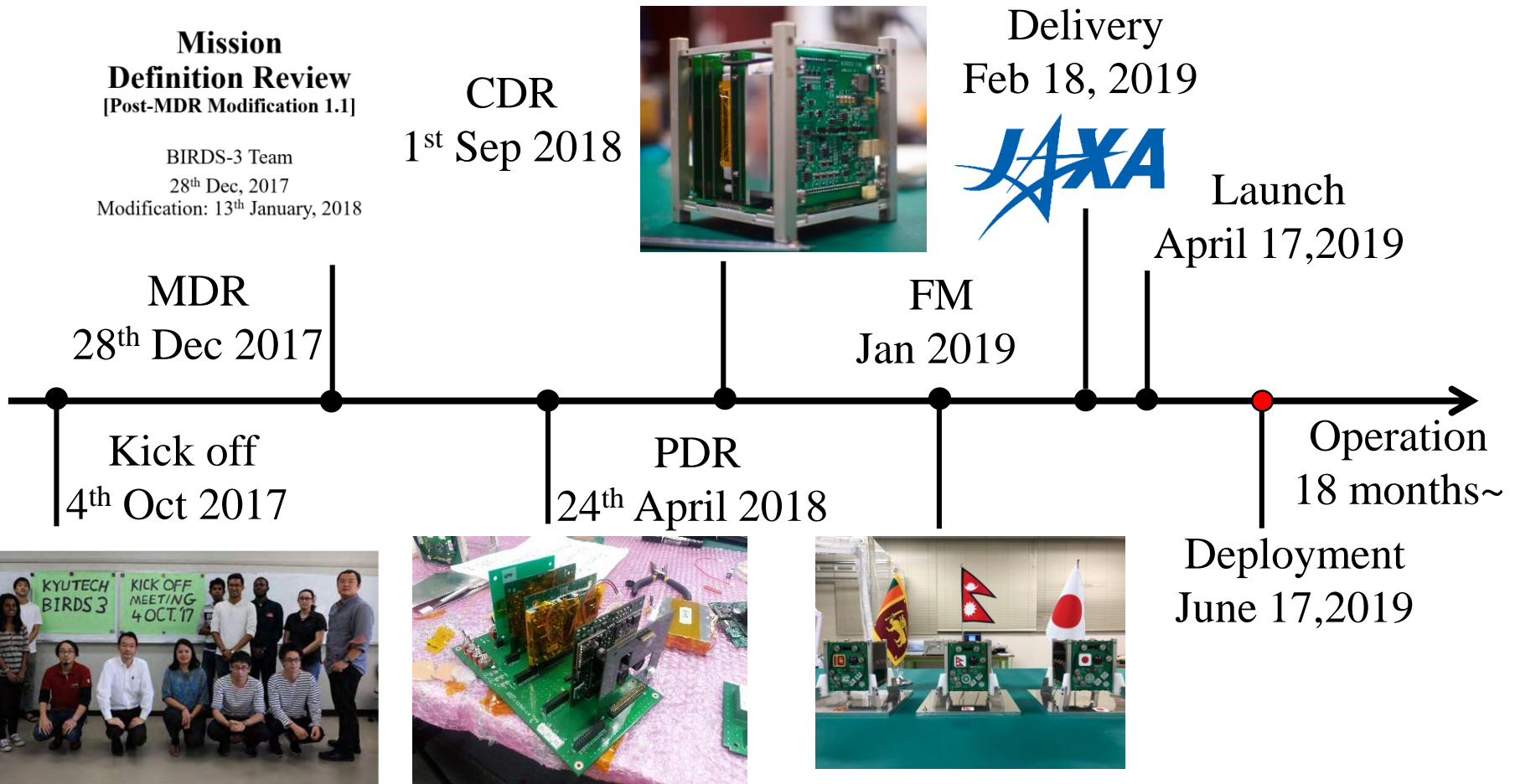
Thermal Vacuum Chamber



Satellite functionality tests



Hands-On Experience





Involvement in Satellite Projects



BIRDS-2 (2018)



<http://birds2.birds-project.com/>

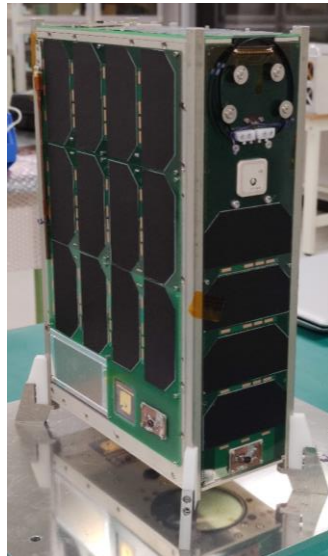
Japan, **Bhutan***,
Malaysia, The Philippines
Three satellites

BIRDS-3 (2019)



<https://birds3.birds-project.com/>

Japan, **Nepal***,
Sri Lanka*,
Three satellites



KITSUNE (2020),
6U satellite

* first satellite of the country



Special Guest Lectures



Prof. Jordi, CalPoly



Dr. Doi, JAXA



Dr. Wood, MIT



Dr. Wakata, JAXA



Dr. Werner,
WMO



Dr. Joel, PHILSA



Research and Outreach



- Design and development of ground sensor terminals for remote data collection using satellites in 11 countries.
- Division of Telecom and Space (DoTS) established under Department of IT and Telecom, Ministry of Information and Communications, Bhutan
- DoTS is spearheading space related activities and outreach programs



SPACE FORUM.BT

<https://www.facebook.com/bhutanspaceweek/>



Life in Japan



Cycling Trip



Celebrating Hanami

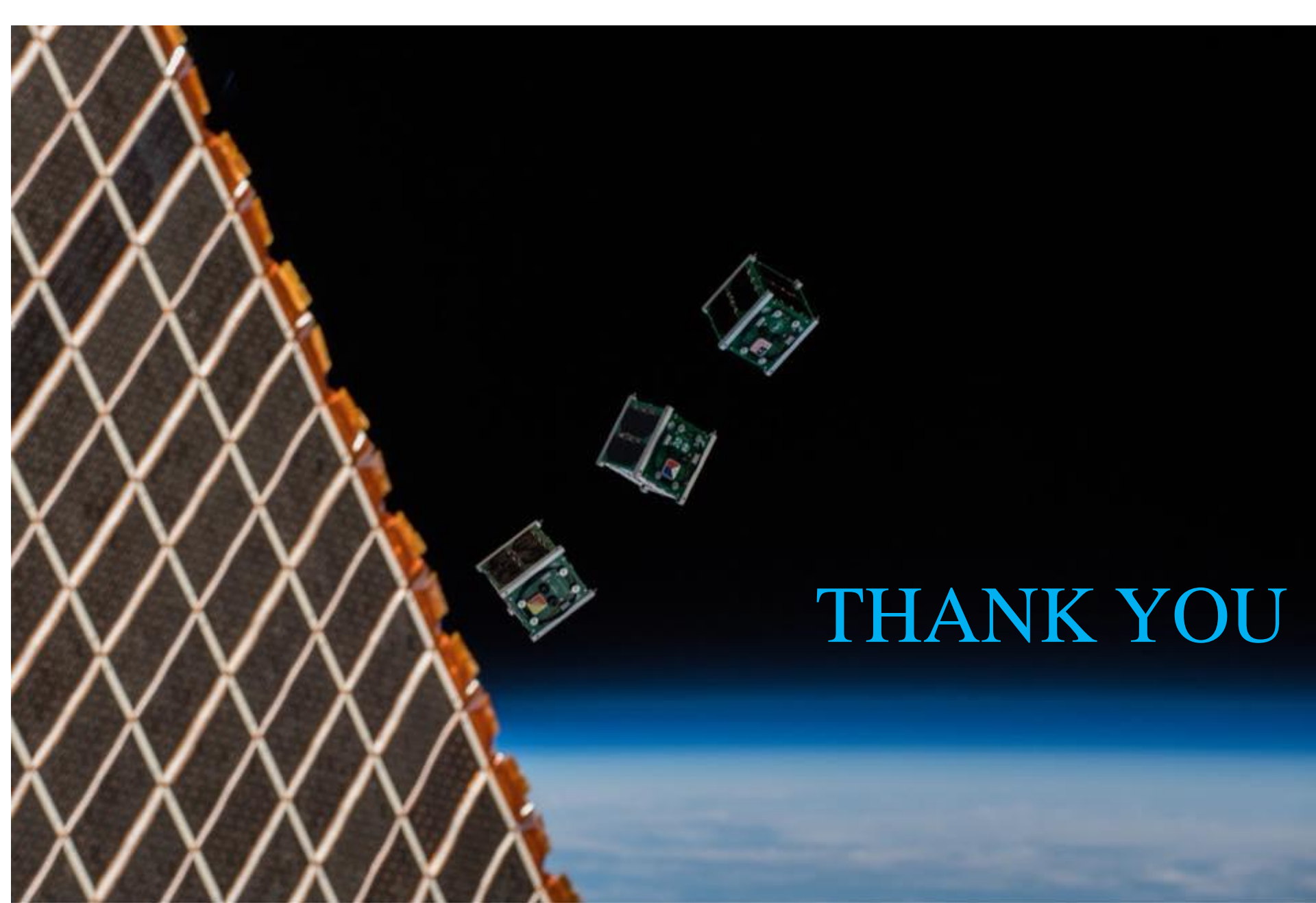


Skiing in Hiroshima



Autumn Leaves





THANK YOU