According to Bryce Space & Technology Co., among academic operators, Kyutech is No. 1 in small satellites launched

Members of BIRDS -1, -2, -3, and -4, on 29 Nov 2018 in front of the lab building

Archive website: http://birds1.birds-project.com/newsletter.html
All back issues are archived at this website.
Acknowledgment of support: This newsletter is supported, in part, by *JSPS Core-to-Core Program, B. Asia-Africa Science Platforms.*

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BIRDS Project Newsletter

Issue No. 38
(26 March 2019)

Edited by:
G. Maeda
Laboratory of Spacecraft Environment Interaction Engineering (LaSEINE),
Kyushu Institute of Technology (Kyutech)
Kitakyushu, Japan

La SEINE

SEIC Space Engineering International Course

IMPORTANT MESSAGE TO ALL PERSONS ENGAGED IN THE BIRDS PROJECT

To conduct the three BIRDS international workshops in Ghana, Mongolia, and Bangladesh, we are receiving generous funding from **JSPS**, *the Japan Society for the Promotion of Science. However, JSPS needs to know how effectively their funds are being used in the pursuit of high-quality science. Accordingly, in the past, I have asked you to insert this acknowledgement in all your BIRDS-related publications:*

Acknowledgement of support

This work was supported by JSPS Core-to-Core Program, B. Asia-Africa Science Platforms.

I would be much obliged if you could send the pdf of any such publication so that we can inform JSPS. In this way JSPS can see the benefits of funding BIRDS-related activities. This evidence is critical when we try to renew the funding for BIRDS workshops.

Right now, we are seeking publications issued between 01 April 2018 and 31 March 2019. If you do not have any to offer this time, please make every effort to publish something between now and 31 March 2020 that includes the acknowledgment to JSPS. Upon publication, please send the pdf to me.

- G. Maeda, the Editor, 8 March 2019

All back issues of this newsletter can be easily downloaded.
Go to here: http://birds1.birds-project.com/newsletter.html and scroll down to the desired issue.

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From The Philippines **The Guest Box**

(Image Source: http://www.philippines-hotels.ws/manila/manila-intramuros.htm)

Explanation on the next page

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The Guest Box photos are explained

Intramuros, also known as Walled City, is a historic site located in Manila, Philippines. This 0.67 square km. piece of land used to be the city of Manila during the Spanish colonial period. To protect the city from foreign invasions, construction of defensive walls began in late 16th century and was finished in early 19th century. After its destruction during World War II, restoration and reconstruction of Intramuros were placed. Today tourists visit Intramuros for its old structures, Hispanic churches, and walls. Mapua University https://www.mapua.edu.ph/ is also located inside the Walled City.

- Marloun P. Sejera, BIRDS-4 Member who comes from Mapua Univ.

01. The vice chancellor of NAST (Nepal entity) attended the handover of BIRDS-3

By Hari Ram Shrestha (M1),

Cho Lab, 06 February 2019

NAST
Vice Chancellor's Visit to Kyutech in Feb. of 2019

NAST=Nepal Academy of Science and Technology

NAST Vice chancellor's visit in KyuTech

Written By: Hari Ram Shrestha

The Vice Chancellor of Nepal Academy of Science and Technology (NAST), Nepal came to Kyushu Institute of Technology (KyuTech), Japan to attend the **Press Conference of BIRDS-3 Satellite Project** held at Language Lounge, KyuTech on February 15, 2019.

To allow him to maximize his stay here in Japan, BIRDS-3 prepared an itinerary for him.

Day 1: 14th Feb 2019 Thursday

On first day he came to Fukuoka airport Japan at 1 PM by Cathay Dargon airlines. After that, we bought some food and cold drinks at the airport and took the highway bus. But by mistake we rode the wrong bus which was going to Kumamoto. At that time we did not noticed that we are in the wrong bus. When we reached the new place we realized we rode the wrong bus. After that we took the (Bullet Train) Shinkansen from Kumamoto to Kokura. And we arrived at the hotel in Kokura at around 4:45 PM.

Welcome to Japan:

Dr. Sunil Babu Shrestha, Vice chancellor, Nepal Academy of Science and Technology(NAST), Nepal

Arrived @Kokura station

Day 2: 15th Feb 2019 Friday

2nd day is an important day because of the press conference. So we came to KyuTech around 10:30 AM and met BIRDS-3 members at Language Horyu Hall and introduced to BIRDS-4 team members also at BIRDS room. And he wished good luck to BIRDS-4 team.

On same day, Prof. Mengu Cho joined us for lunch at Nakamura Hall restaurant.

We stayed at that for one hour before beginning the formal program of the press conference at Language Lounge.

They were introduced with Kyutech president and Dr. Sunil Babu Shrestha gave the token from Nepal.

Evening: BIRDS-3 Team took him for dinner at Kokura and we discussed about a lot of things.

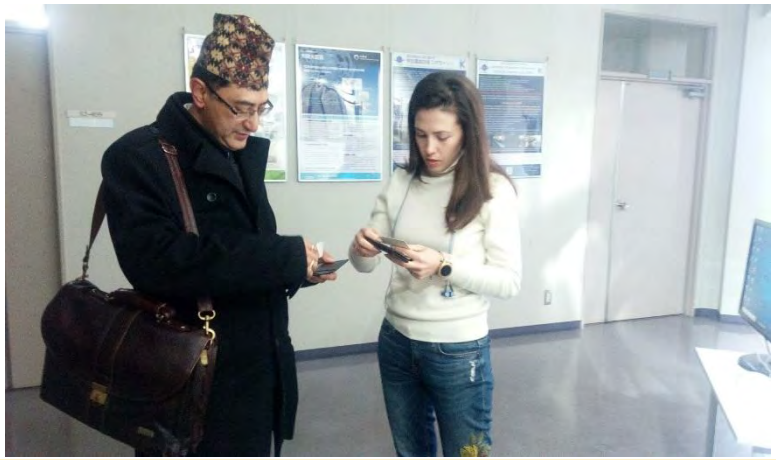
Day 3: 16th Feb 2019 Saturday

He visited LaSEINE and KyuTech labs. Dr. Kateryana explained the details about the lab. He was very interested and he asked so many questions about the have facilities and services that the laboratory offers.

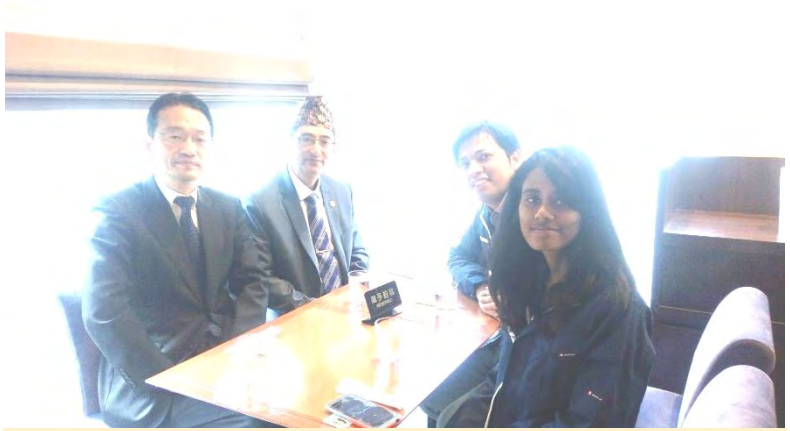
Photos form different activities:

Written By: Hari Ram Shrestha

Ready for photo: After lunch, Dr. Shrestha and Professor Cho



Dr. Shrestra and Dr. Kateryana exchanging their business card



First Meeting: Vice chancellor and Professor Cho at the café of Nakamura Hall

The First Satellite of Nepal

Dr. Shrestha with NepaliSat-1 at clean room

We took a group picture after the press conference

Continued . . . .

Written By: Hari Ram Shrestha

Apiwat accompanied us during that time. He also explained about the Ground station and its operations.

Mojiko

After lunch we reached to Moji port by train from the Kyusokudaimae station and we enjoyed the place. On that day the weather was cold and raining but we still managed to go to the museum.

At night Prof. Cho had dinner with Dr. Sunil Babu Shrestha together with me and Abhas). At that time Prof. and Dr. Shrestha talked about the BIRDS 3 Nepalisat 1 and how to develop the new project and MOU visit Nepal. He agreed and he said he is going to Nepal next year in 2020 (maybe for a workshop).

Day 4: 17th Feb 2019 Sunday

On that day Abhas Maskey accompanied him to the airport flying back Nepal.

Abhas and VC sir at Fukuoka Airport

Programme: Press Conference of BIRDS-3 , 15 th Feb 2019

Representative Name: Dr.Sunil Babu Shrestha, Vice-chancellor,NAST

Daily plan for Nepalese Deligate in to JAPAN

Days	Date	Works	Time	Responible person	Remarks
1st	14th Thrusday Feb 2019	Arrive at Fukuoka Airport	1:00PM	Pick up by Hari	From Fukuoka airport
		Fukuoka to Kokura	1:00 PM to 3:00PM	on the way	
		Check in to the hotel	3:00 PM	pooja/Hari	Daiwa Roynet Hotel near about the Kokura station
		Dinner	7:00 PM	TC by hari	
2nd	15th Friday Feb 2019	Hotel from Kokura to KyTech	9:00 AM to 10:00 AM	Take care by hari	
		Intoduction to KyuTech Professors and Staffs,BIRDS-3/BIRDS-4	10:00 AM to11:30 AM	By Abhas/Thairndu	4th floor/Birds room
		lunch at Kyutech	11:30PM to 12:45Pm	Prof.cho,Guests,Hari,Dulani	cafeteria at Nakamura-hall
		Attandence at the Press conference	1:00 PM to 4:00 PM	Kyutech	
		Return to the hotal Daiwa Roynet at Kokura	4:15PM	by Dulani	Rest
		Dinner	6:45 PM to 9:00	VC sir and Birds 3 team	At OKONOMIYAKI restauran reserved by Kakimoto
3rd	16th Saturday Feb 2019	Visiting the Laboratory	10:30 AM to 12:00 PM	Lead by Dulani	(Dr.Kateryna/Birds-3 team)
		Lunch	12:00 PM to	with Team	near about the KyuTech
		Visiting/Shopping at Kokura/Moji Port	2:00PM to 5:00PM	Hari/Dulani	
		Dinner among them (Prof.Cho and Dr.sunil Babu sir)	6:30 PM to	Take Care by Prof.Cho	near about the Kokura
4th	17th Sunday Feb 2019	return to Nepal(Kokura to Fukuoka Airport)	9:00 AM	Take care by Abhas	flight is 2 PM from Fukuoka Int.Airport

hotel:Daiwa Roynet Hotel near Kokura station(14th, 15th,16th Feb 2019

For contact persons:

Makiko:08090271516

Kakimoto: 08017563675

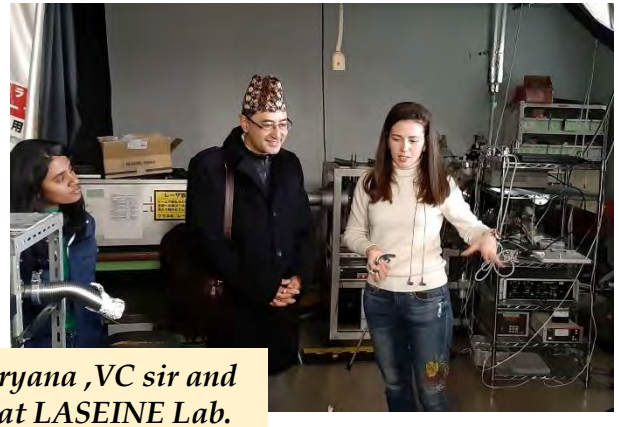
Pooja: 08080404449

Daily planned schedule for Dr. Shrestha

Pictures from his visit

Dinner time at Kokura

Apiwat Explaining to VC sir about the Ground Station.



Dr.Kateryana ,VC sir and Dulani at LASEINE Lab.

At Kyushu Railway History Museum at Mojiko

Talking about the Antenna Tower on top of building

Press conference time at LL with Journalists

Hari, Vc sir and Abhas with NanoSatellites at Clean Room.

Headlines from Nepali Media:


kantipurdaily.com

शनिबार, ८ फागुन, २०७५

बन्यो नेपालकै भू-उपग्रह

जापानको क्यूटेक विश्वविद्यालयको सहकार्यमा निर्माण गरिएको भूउपग्रह 'नेपाली-स्याट-१' आगामी वैशाख ४ मा प्रक्षेपण गरिनेछ भने नेपालको आकाशमा दैनिक ५/१० मिनेटसम्म रहने यसको मुख्य काम तस्विरहरू खिचेर पठाउनु हो ।

गोविन्द पोखरेल काठमाडौं

Ready to launch Nepal's First Satellite:

Kantipur Daily is one of the biggest Media house in Nepal. The Newspaper published news about the Nepal first satellite is going to launch on 17th April 2019 from the US.

They wrote: The President of KyuTech Professor Yuji OIE has provided the Model of NepaliSat-1 CubeSat to Dr.Sunil Babu Shrestha for NAST Nepal.

Ujyaalo 90MHZ FM Radio also had broadcasted the news about the BIRDS-3 Nepalisat-1 satellite.

02. BRAC University selects new vice chancellor

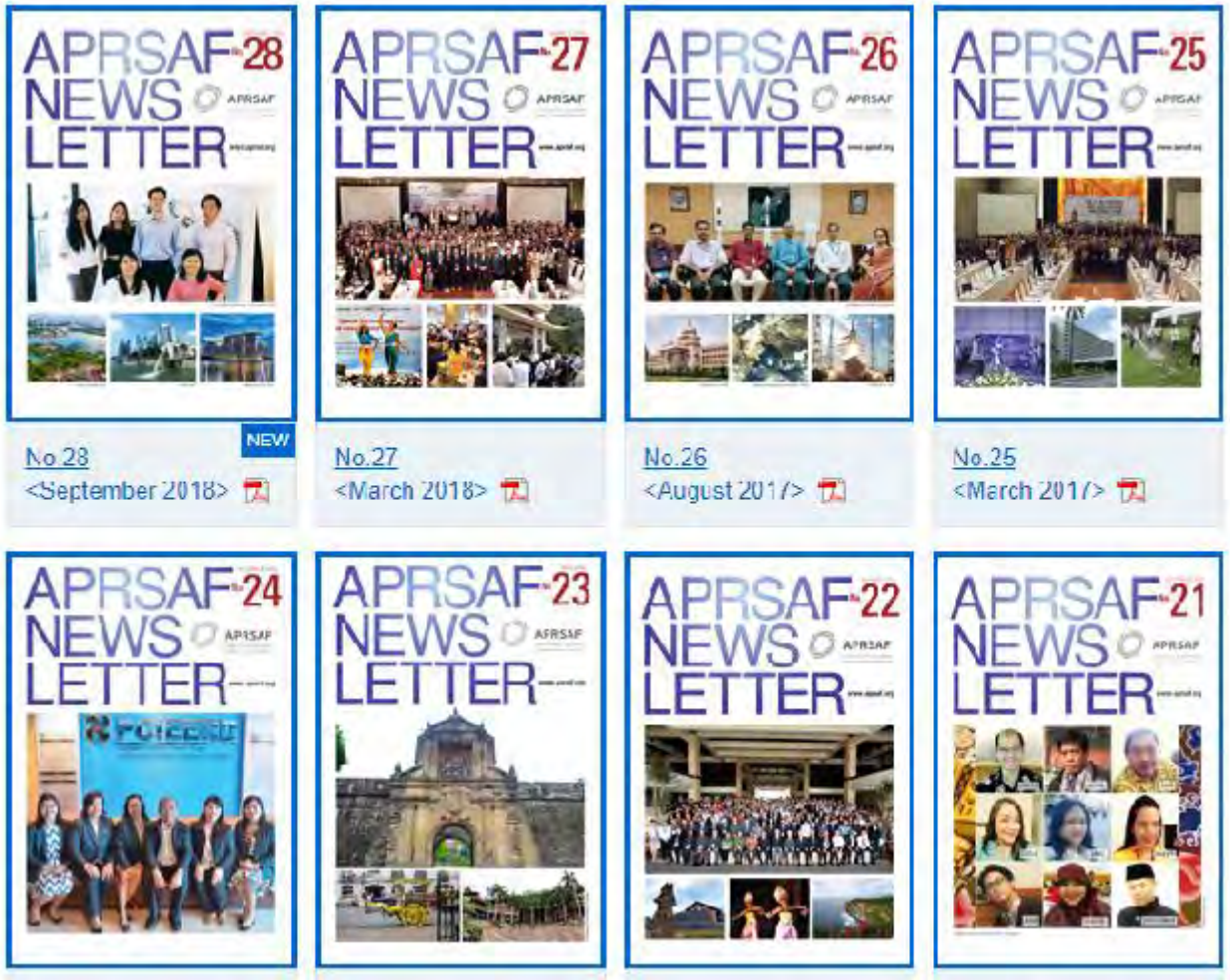
The BIRDS community extends its congratulations to BRAC University for its new vice chancellor – after having made an exhaustive executive search for the top post.

BRAC University is a member of BIRDS-1 and will be the host of **4BIW (the 4th BIRDS International Workshop)** *later this year.*

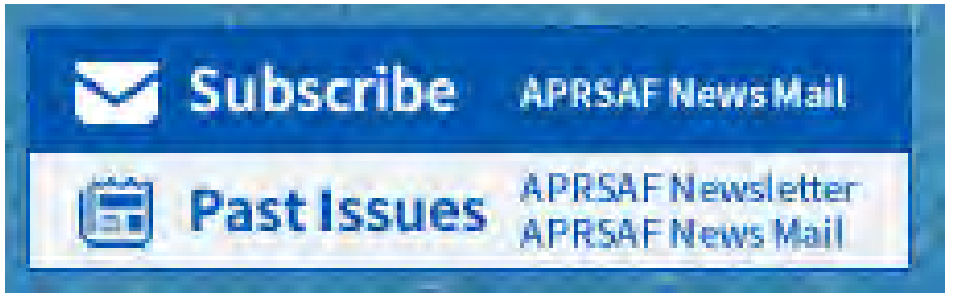
BRAC UNIVERSITY
Inspiring Excellence

For details, see this: https://www.bracu.ac.bd/about/people/professor-vincent-chang-phd

03. The APRSAF Newsletter and the APRSAF News Mail



You can download any APRSAF Newsletter from here:
https://www.aprsaf.org/newsmails_newsletters/letters.php



You can subscribe to **APRSAF Newsletter** or **APRSAF News Mail**, or both. See sample of the **News Mail** on the next page.

This is a sample of the APRSAF News Mail

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ASIA-PACIFIC REGIONAL SPACE AGENCY FORUM (APRSAF)
News Mail No. 164 February 18, 2019
http://www.aprsaf.org/

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- * CONTENTS

[1] News on APRSAF Activities
1) Interviews are now posted on the APRSAF website
2) Questionnaire on future APRSAF annual meetings

[2] News from APRSAF Community
1) MicroDragon successfully launched aboard Epsilon-4
2) China's Moon Landing: Lunar Rover Begins Its Exploration
3) **Kyutech now seeking participants for BIRDS-5**
4) Scholarships for Water Engineering and Management (WEM) in Asian Institute of Technology are available by 31 March 2019

3) Kyutech now seeking participants for BIRDS-5

The Kyushu Institute of Technology (Kyutech) in southern Japan is now seeking participants for its BIRDS Project. By participating, your country has an opportunity to launch its first satellite into space. But more importantly, through this two-year project, Kyutech will train 2 or 3 engineers so that they will be able to go back to your country and build more satellites. By building the first satellite at Kyutech, they will acquire all the skills needed to build more on home turf. It will be an invaluable asset to make your space program long term and sustainable.

The results of BIRDS-1 through BIRDS-4 can be viewed here:
http://birds1.birds-project.com/newsletter.html
[the BIRDS Project Newsletter]

News flash:

APRSAF-26 will take place in Nagoya, Japan, this year during the month of November

See: https://www.aprsaf.org/

See some photos of 2018 APRSAF-25 in Singapore
https://www.aprsaf.org/annual_meetings/aprsaf25/photo.php

04. Message from Paraguay – how it is boosting academic interest in space engineering

Dear Prof. Maeda,

It is a big time here when you send us your newsletter. Today for instance, we had our weekly meeting with all students working on space-related projects at UNA campus. One discussion topic was Mr. Hiroki Hisatsugu -- regarding his experiment with a CD motor (from your Newsletter Issue No. 37). It was a beautiful coincidence we started to look into using this same device for our attitude control system. There are 5 officially established projects. (I will send you more details on our newsletter) Dr. Stalder and I are the only 2 faculty members working together at AEP and UNA campus, therefore, we have a lot to carry on our backs. **(see Pic1)**

This was our 3rd weekly meeting. Every time we get together, new student groups showed up to apply to work together with AEP. The concept behind doing this activity is to train them on grad school's advisor -student progress meetings, like I used to do in the US. This help to be on track on several projects, team brain storming contribution and keep it up with motivation and encouragements. Discussion starts with some snacks and then, individual progress report, updates, special activities planning and lastly, grad school search, scholarship search and other opportunities. It takes the whole morning.

As the number of teams increase, Dr. Stalder and I plan to divide in to groups. Every student has a 15-minute presentation to do, including myself and Dr. Stalder. We all learn from every presentation.

Jorge Kurita, Ph.D. , Director, Planning and Management,
Space Agency of Paraguay (AEP)
7 March 2019

Note: AEP is a member of BIRDS-4 Project

OLAYINKA'S WORLD

COLUMN NO 8

OLAYINKA FAGBEMIRO
NATIONAL SPACE RESEARCH & DEVELOPMENT AGENCY(NASRDA), ABUJA. NIGERIA
PRINCIPAL SCIENTIFIC OFFICER, HEAD, SPACE EDUCATION UNIT
24 Feb. 2019

NASRDA RETAINS THE BEST RESEARCH INSTITUTE UNDER THE MINISTRY OF SCIENCE AND TECHNOLOGY IN NIGERIA

There was great euphoria as the National Space Research and Development Agency (NASRDA) emerges best Research Institution in Nigeria at the recently concluded 2019 Science, Technology and Innovation EXPO in Enugu, Nigeria.
NASRDA emerged first, having defeated over 17 other Research institutions in the country with over 80% marks to retain best Research Institution in the country, the same position it took in 2018.
NASRDA which defeated the runner up with over 20% marks was commended for her giant strides in design and development of various space related applications and innovative inventions.

[continued in the next column]

The staff of the organization were happy when the trophy of the Agency's victory was formally presented to the nation's Space Family. During a meeting which was well attended by Very Special Dignitaries from the Agency's mother ministry, the Ministry of Science and Technology, the DG NASRDA was full of praises for the Engineers and Scientists of the Agency, the event was savoured by melodious music from Nigeria Police Band.
The Director General, Prof. Seidu Onalilo Mohammed who was visibly ecstatic, thanked the Agency's staff for their cooperation and unwavering commitment to advancing Space Science and Technology both in Nigeria and beyond the shores of the country, promising that, such efforts would continue to be rewarded by the Agency in the days ahead.

[PHOTOS ARE ON THE NEXT PAGE]

The Director, Planning, Policy and Research, Dr Francis Chizea, holding the plaque for the 1st Position awarded to the Agency

The Director General (middle), NASRDA, flanked on the left and right by officials of the Ministry of Science and Technology during the celebration

06. Dominic (Cal Poly student) interacted with SEIC students during Jan-Feb of 2019

← **Dominic arrived on 15 January to begin a short intern at LaSEINE. He became quite popular with SEIC students.**

I served 納豆 (fermented soy beans) to Dominic – he did not like it.

However, he did like **Yappari Steak House** at Tobata Station.

Dominic served tacos on 28 Feb. 2019 – he provided beef, veggies, chicken, and cheese.

07. BIRDS-1 news: Mr. Jigme Tenzing is the new director of DITT in Bhutan

Photo courtesy of Mr Sonam Phuntsho

The entire BIRDS community extends its congratulations to

Mr. Jigme Tenzing

[photo at the left] – the newly appointed director of "Department of IT and Telecom" (or DITT for short). DITT oversees, for now, Bhutan's space activities. This appointment became effective on 27th Feb 2019.

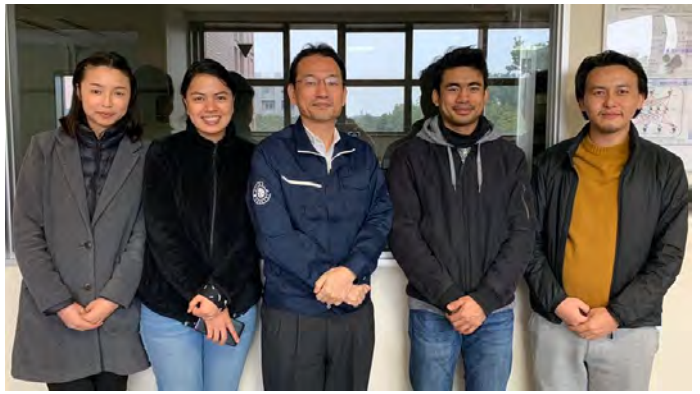
DITT is under Bhutan's Ministry of Information and Communication.

The national flag of Bhutan

08. BIRDS-1 news: Bhutan students offer to Cho Lab staff a “Farewell Lunch”

Bhutan team members (Kiran, Pooja, Yeshey, and Cheki) generously provided lunch to Cho Lab staff on 27 February 2019 on the 3F of the SVBL building.
The food was delicious !

The Bhutanese dishes are explained one by one



Yeshey, Pooja, Prof Cho, Kiran, Cheki

Pooja will stay for a Phd supported by PNST; the others return to DITT in Bhutan.

The 4th COSPAR Symposium
Small satellites for sustainable Science And Development
4-8 November, 2019, Hotel Daniel, Herzliya, Israel

The Committee on Space Research (COSPAR) was established by ICSU, now the International Science Council (ISC), in 1958. Among COSPAR's objectives are the promotion of scientific research in space on an international level, with emphasis on the free exchange of results, information, and opinions, and providing a forum, open to all scientists, for the discussion of problems that may affect space research. These objectives are achieved through the organization of symposia, publication, and other means.

http://www.cospar2019.org/

Call for abstract

The 4th COSPAR Symposium is now entering the phase of active preparation. The Call for Abstracts was released in the December issue of Space Research Today and is of course available on the Symposium web site (http://www.cospar2019.org/).
The scientific program is available here: http://www.cospar2019.org/call-for-papers/

Final deadline for abstract submission: April 30, 2019

Pierric Ferrier, Chairman of the A.1 session

10. BIRDS-3 delivers an outstanding barbeque dinner

6:00 PM, 11 March 2019

The mission of this BBQ was to celebrate the delivery of BIRDS-3 satellites to JAXA.

Above: Several guests from Astroberry of Thailand

Above: Maisun introduces his wife to everyone

GREAT JOB BIRDS-3 TEAM

11. GS WS: The 2nd BIRDS Ground Station Operation Workshop 2019

Opening Day - 23 January 2019

Report by Apiwat, Kiran, Mark
(BIRDS-1, BIRDS-2, BIRDS-4, respectively)

At Kyutech, Japan, Jan 23rd -29th 2019

In January 2019 , Kyutech invited young engineer from 13 countries to attend in the First Ground Station Operation Workshop at Kyutech, Japan. Purpose of the workshop was to (1) Train participants on general aspects of ground station operation, (2) Preparation for ground station network operation of BIRDS-3 satellites, and (3) Draft of standardized store-and-forward (S&F) mission data format.

Sponsored by:

JSPS 独立行政法人 日本学術振興会 Japan Society for the Promotion of Science

Kyutech Kyushu Institute of Technology

La SEINE Laboratory of Spacecraft Environment INteraction Engineering

Opening speech by Asst. Prof. George Maeda

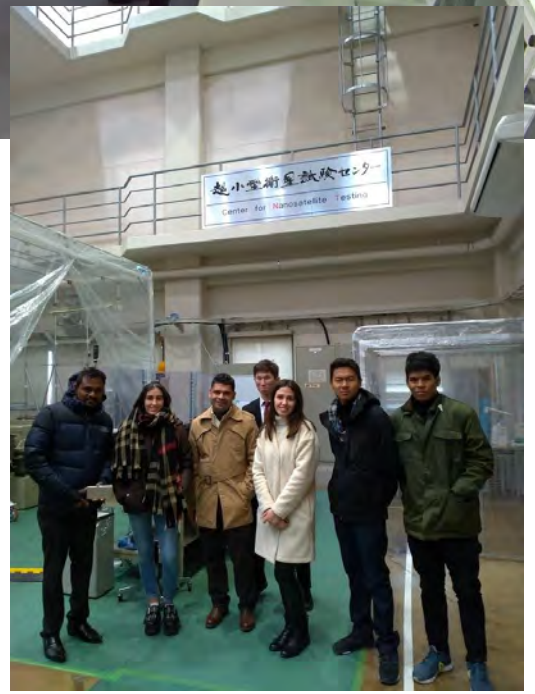
Prof. Maeda gave an introduction of Kyutech and explained about the workshop objectives. He also introduced some interesting spots in Kitakyushu.

Laboratory of Spacecraft Environment INteraction Engineering

Facilities Tour

Participants visited **Center of Nano Satellite Testing** which is one of main facilities in LaSEINE Laboratory.
This center has tested most of the small satellites built in Japan.

Dr.Kate introduces LaSEINE facilities to the guests.



Presentations from participants

Esteban, Costa Rica

Camila, Argentina

Charleston, Philippines

Each participant presented about space activities and status of ground station operation in there home institute. Also, they presented their future plan of space development in home country.

Day 2: GS installation training and GS development discussion

Team A: GS installation training
Kishimoto and Tharindu of BIRDS-3 teach the team A members to set up the GS hardware and software.

Team B: Discussion about GS operation and improvement
The discussion lead by Apiwat, Adrian and Maisun on afternoon of the 2nd day. Thank you to the valuable ideas from participants.

Day 3, BIRDS-3 operation training using Engineering Model (EM)

Kishimoto is preparing a ground station equipment for training

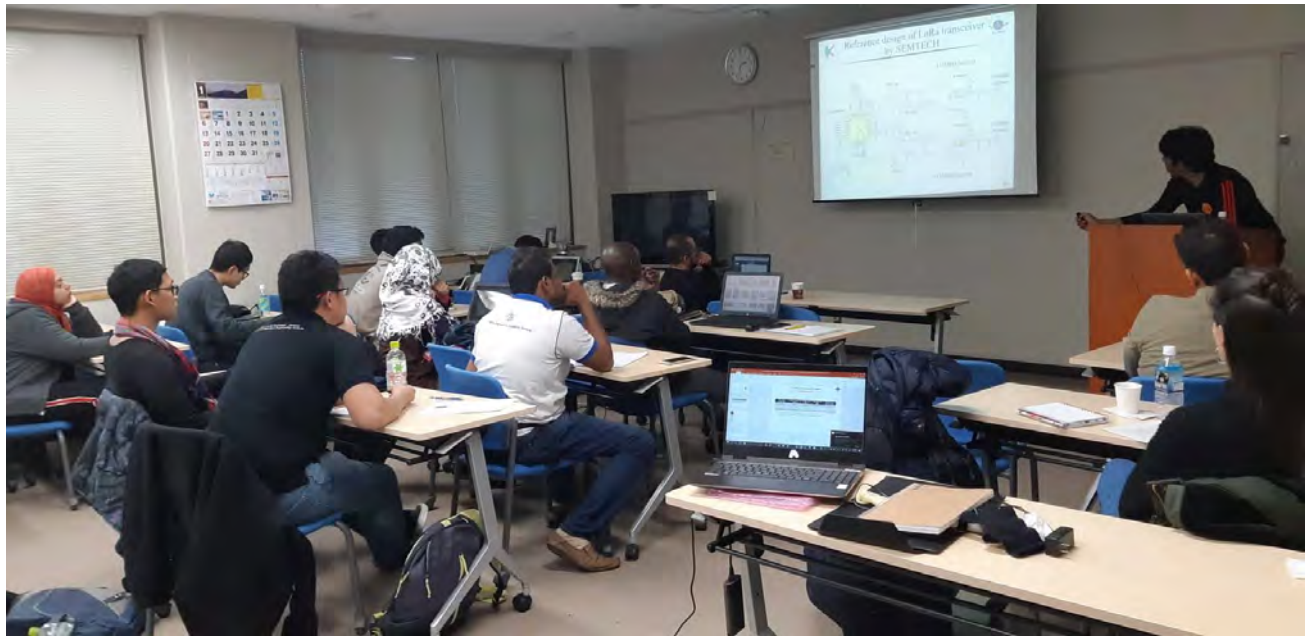
Photo with the BIRDS-3 EM

Tharindu explaining how to operate BIRDS-3 satellite. Everyone is interested.

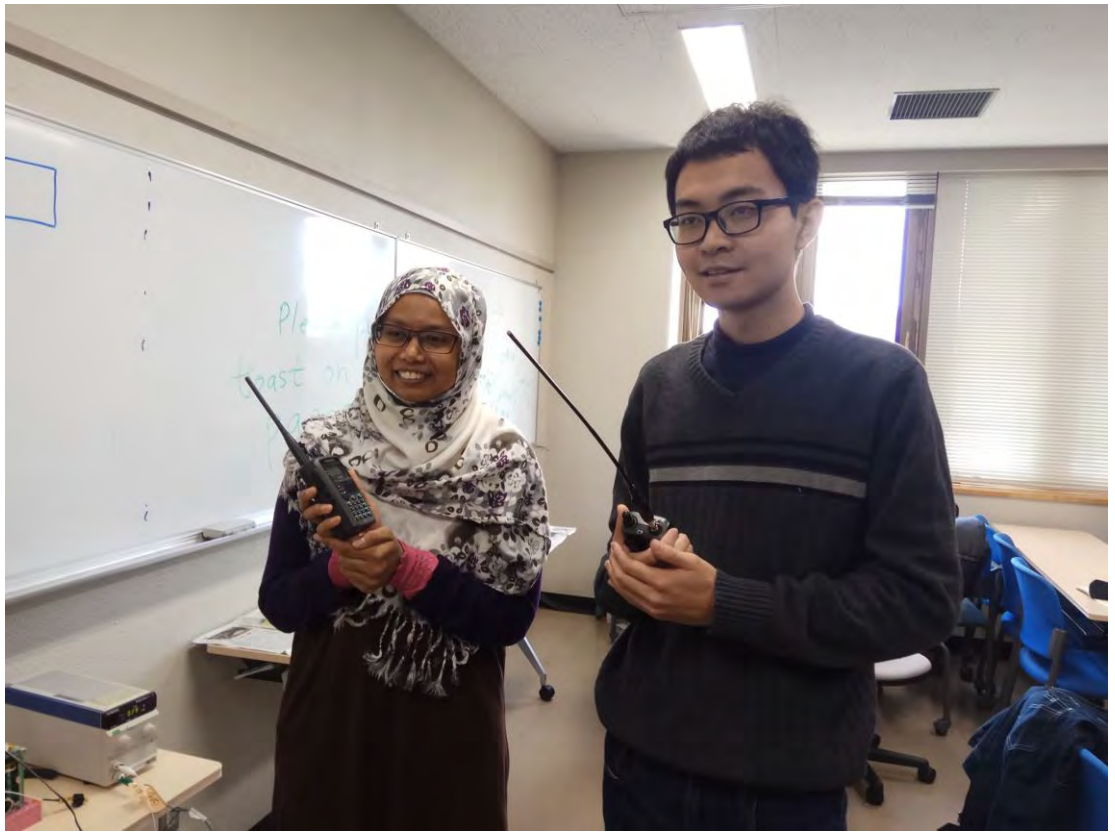
Day 3, BIRDS-3 GS Operation training with on-orbit satellite

Adrian explaining about BIRDS-2 satellite mission and how to use the ground station to operate on-orbit satellites.

Day 4, BIRDS-3 LoRa mission and APRS digipeater training



Tharindu presented BIRDS-3 LoRa mission



APRS digipeater mission hands-on training
Nadhirah (Malaysia) and Ming-Xian (Taiwan).

Day 4, BIRDS-3 LoRa mission and BIRDS-3 APRS digipeater

Group photo after finishing the APRS mission training

APRS digipeater mission training
is conduct by Yeshey (Bhutan, BIRDS-2)

Day 5, Store and Forward mission presentation from UPD and TEC

Charleston (UPD) presented on "DIWATA-1 Store and Forward Test using the UP ARISS". He shows the test result and progress of DIWATA-1 S&F in this presentation

Esteban (TEC) presented on "Irazu Project's Ground Stations Operation Results and GW-Sat's Ground Sensor Terminal". IRAZU is successfully working in orbit.

Day 5, Mission Proposal Activity: Satellite-based Store-and-Forward Remote Data Collection

Participants are separated into 3 groups for this activity to make a proposal of Satellite-based Store-and-Forward Remote Data Collection.

- Discuss and define of the following:
  - Issus in the country
  - Needed sensors and accessory device
  - Data collection requirements
  - Define how network should be?

After the proposal finished, each group presented to all of participants for brainstorming.

Group A: Thailand, Philippines, Taiwan, Malaysia

Group B: Costa Rica, Ghana, Nigeria, Mongolia, Argentina

Group C: Costa Rica, Bangladesh, Sri Lanka, Nepal, Bhutan

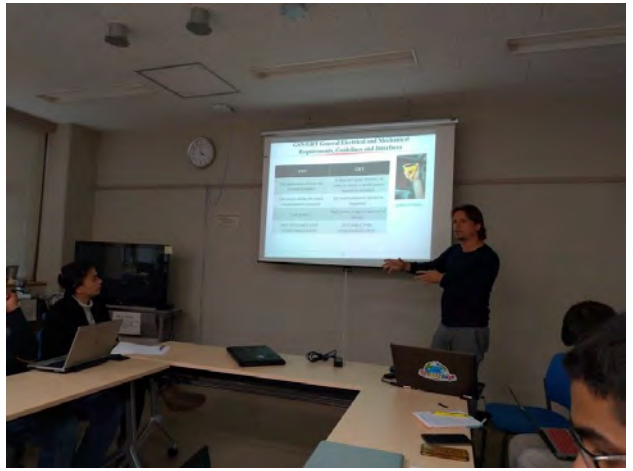
Maeda-sensei made a comment during discussion

Day 5, Technical Panel Discussion: Developments, Current Status and Next Steps

The discussion covered these matters:

- Collaboration on Defining the Remote Data Collection System and Subsystem Requirements
- Standardizing the Ground Sensor Terminal interfaces and data format.

Main panelists are Prof. Cho, Adrian, Pooja, Juan Jose



Juan Jose (Kyutech) introduce the idea of develop Ground Station Sensor Terminal base on CubeSat design.

Esteban (TEC) share the data format for S&F mission

Prof. Cho gave suggestions during the technical discussion.

Closing discussion

Prof. Cho gave a closing speech and conclusion of the workshop.

GS operator from each country exchange QSL card.

Bangladesh is the winner of CW reception competition.
Read full in next page.

Ming-Xian (Taiwan) gave a souvenir to Prof.Cho

Roshan (Nepal) gave a souvenir to Maeda-sensei

CW Decoding Competition For BIRDS GSN Members

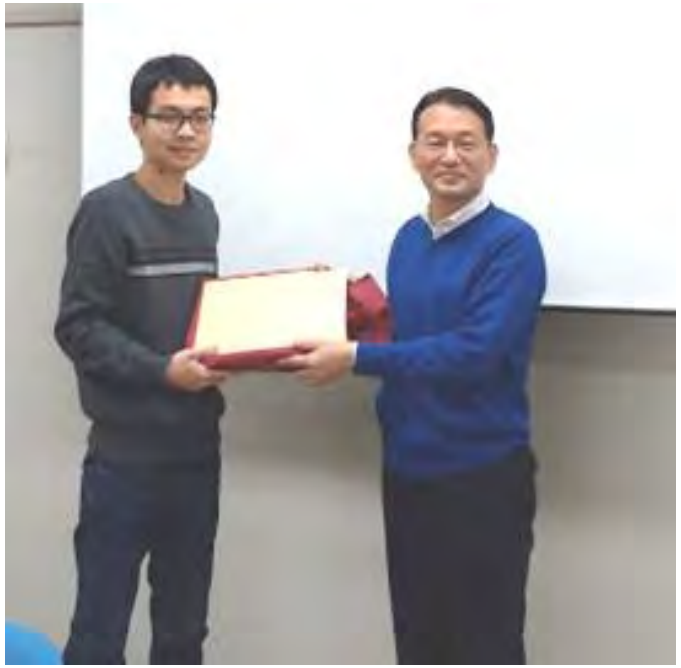
Objective: To receive and decode as many CW beacon signals from BIRDS-2 CubeSats.
Period: September – December, 2018
Report by Kiran

Competition Month	Winner
September, 2018	UiTM GS, Malaysia
October, 2018	BRAC GS, Bangladesh
November, 2018	NCKU GS, Taiwan
December, 2018	BRAC GS, Bangladesh

(*Above*) Nadhirah of UiTM receiving the award for Malaysia GS.

(*Below*) Kafi (alumnus of Kyutech) receiving the award for BRAC GS, Bangladesh.

(*Right*) Henry of NCKU receiving the award for Taiwan GS.



Winners were awarded:
Certificate for Appreciation for GS and each operator.
All 5 active GS were presented:
A custom wall clock designed by BIRDS-2 team as a token of appreciation.
All GS members were given:
Custom calendar designed by BIRDS-2 team as an appreciation to their support.

Token of appreciation for two active participating GS.

(Above) Charles of UPD, Philippines GS.

(Right) Thuenzang of DITT, Bhutan GS.

Sponsor of the prizes: GEDC AIRBUS Diversity Award money

(Above) Estaban of TEC, Costa Rica, proudly holding the calendar designed by BIRDS-2 team

Usuk, NUM, Mongolia

Henry, NCKU, Taiwan

Ernest, ANUC, Ghana

Representatives from DITT (Thuenzang) and UPD (Charles) handed out QSL cards to all the GS who managed to receive and decode CW beacon signal from BIRDS-2 CubeSats even at least once.

Kafi, BRAC, Bangladesh

Nadhirah, UiTM, Malaysia

Fang, KMUTNB, Thailand

Finally exchanging with each other

End of the workshop report

12. GS WS: Participants visit Mojiko and Shimonoseki

The right-side is Shimonoseki (Honshu) and the left-side is Mojiko (Kyushu). This strait (Kanmon Strait) has a heavy traffic of seagoing ships. Mojiko is the Northern terminus of the JR line that runs all the way down to Kagoshima.

Ground Station Workshop Participants visit Mojiko & Shimonoseki

By Mark Angelo C. Purio

Member, Philippines, BIRDS-4

January 27, 2019

Map from around Year 1914

Map from https://thetokyofiles.files.wordpress.com/2015/10/shimonoseki-moji-japan-map-194.jpg?w=719&h=455

Ground Station Workshop Participants' Visit to Mojiko & Shimonoseki

Written By: Mark Angelo C. Purio

Time and again, attending a workshop is a great avenue to improve one's knowledge and to connect with other people who shares common interest. When the workshop is conducted in a place with so much to offer, a workshop becomes so much fun when one visit various places. As the prover says, "All work and no play makes Jack a dull boy.", hence, the team arranged a on day trip to Mojiko and Shimonoseki last January 27, 2019.

In this article, allow us share our itinerary and some photos to give you a glimpse of the places we've been to. So If you happen to go to Kitakyushu, might as well visit these places.

Mojiko - Moji Port - is a port in the city of Kitakyushu, in Fukuoka prefecture, and is strategically located at the narrowest point of the Kanmon Straits that separate Kyushu - the island it is on - from the main island of Honshu. Mojiko developed into a major international and domestic port at the end of the 19th century. (Source link)

Ground station participants with SEIC students during our arrival at Mojiko Station

Places We Visited in Mojiko

Mojiko Station

Only 15 mins from Kokura Station and claimed to be based on the old Termini Station in Rome, the actual station building is preserved and renovated to give visitors a feeling of nostalgia. This is our gateway towards our destination. A great place to start the excursion.

Group photo in front of the Mojiko Train Station Building

Ground Station Workshop Participants' Visit to Mojiko & Shimonoseki

Written By: Mark Angelo C. Purio

Old Moji Mitsui Club

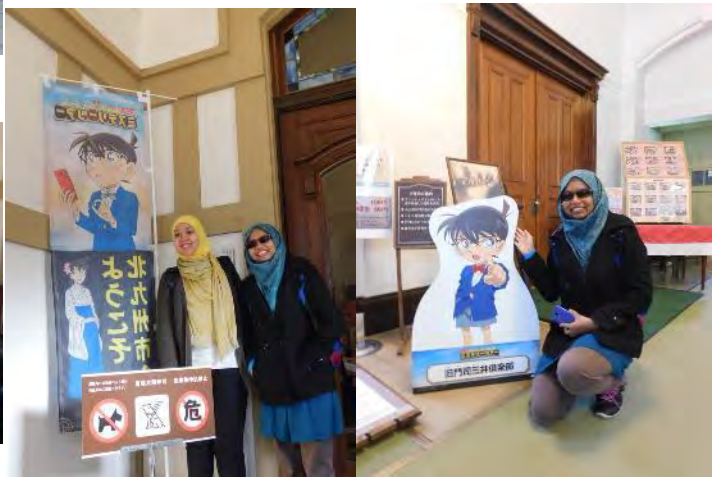
The stay of Albert Einstein and her wife to this hotel in 1922 made it even popular for tourist. Aside from this fact, it is a cultural asset for the place because it was used as a guesthouse and a social event club. Being nerdy as we are, it excites everyone to see where the famous scientist stayed.

Individual poses outside the Old Moji Misui Club

Group photo outside the Old Moji Mitsui Club

More Photos outside the club.

Participants enjoying the no entrance fee tour.



A snap with Detective Conan.

Ground Station Workshop Participants' Visit to Mojiko & Shimonoseki

Written By: Mark Angelo C. Purio

Kaikyo Drama Ship & Moji Port

This museum showcases the historical events related Kanmon Strait. Since it was closed for renovation, we happen to just be amazed of the building structure and the view of Kanmon Strait with its cold breeze.

Individual poses outside the Kaikyo Drama Ship

Bright sunny day with cold breeze at Moji Port.

Enjoying the nice view at the port

Ground Station Workshop Participants' Visit to Mojiko & Shimonoseki

Written By: Mark Angelo C. Purio

Kyushu Railway History Museum

Just near the Mojiko station, it houses a full history and culture of Kyushu Railway. From old trains to uniforms, it gives you a hint of how the railways evolved as we see it at present. Definitely a must visit place in Mojiko.

Entering the Kyushu Railway History Museum.

(Left) Group photo in front of the souvenir shop

(Right) Had a chance to meet KyuTech President in the museum.

Prof. Oie（偶然）

Participants enjoying train mechanism (left), driving the fully-functional mini train (mid) and coin souvenir dispenser (right)

Ground Station Workshop Participants' Visit to Mojiko & Shimonoseki

Written By: Mark Angelo C. Purio

Places We Visited in Shimonoseki

Kanmon Ferry, Kanmon Wharf & Karato Market

By just a 5-minute ride through a ferry, we were able to go to another major island in Japan, Honshu. This is where Shimonoseki is situated. Just like Moji Port it is located overlooking Kanmon Strait where cargo ships pass and Kanmon bridge can be visibly observed. Just near the Kanmon wharf is the Karato Market famous for a wide array of seafood served fresh.

Group photo while waiting for the ferry.

Despite of the cold weather and waves, the team stayed at the upper deck for better view and more unique ferry experience.

A wide array of seafood served fresh at Karato Market. We stopped here for lunch.

(Top) Ice cream session, (Bot) Nakayama and Hind enjoying their stay at Kanmon wharf.

Ground Station Workshop Participants' Visit to Mojiko & Shimonoseki

Written By: Mark Angelo C. Purio

Kame Yama Temple

Common to Japanese places, a temple just across Karato Market, offers a better view of Kanmon Straits' breath-taking view. Situated on top of a hill, we need to climb up the stairs through a a collosal "torii", a Japanese traditional gate.

More group photos for everyone.

A smaller "torii" inside the shrine.

Capturing memories in the area with pictures with the temple and monuments.

Climbing up the stairs towards the temple.

The Kame Yama Temple.

Ground Station Workshop Participants' Visit to Mojiko & Shimonoseki

Written By: Mark Angelo C. Purio

Haikara't Yokocho Amusement Park

Going back to childhood, that's what amusement park offers. Just beside the marine theme park and the Kanmon wharf, still overlooking the Kanmon Strait. We manage to ride the enormous ferris wheel and had a better view of the scenery.

Photo op in front of the Haikara't Yokocho Amusement Park

Ferris wheel pictures because they look very nice.

Outside the marine aquarium.

A photo of penguins as seen from top of the ferris wheel.

While waiting for our Ferris Wheel ride.

Ground Station Workshop Participants' Visit to Mojiko & Shimonoseki

Written By: Mark Angelo C. Purio

Back to Mojiko Retro

We went back from Shimonoseki to Mojiko Retro for the places we missed to visit, of course, the free ones. We went to Chinese Eastern Railway Office, Blue Wing Moji and Kaikyo Plaza.

This caps-off the excursion and we hope from KyuTech that everyone enjoys their stay in Japan as much as possible. More than the enjoyment, it is also hoped that our ground station participants learned a lot from the workshop.

More photos of the area and buying souvenirs at Kaikyo Plaza.

Chinese Eastern Railway Office, Mojiko

Group photo to end the tour.

A picture at the entrance of Blue Wing Moji

End of excursion report

Individual Reports from the GS Workshop Participants

The reports are from:

1. Ming-Xian Huang, Taiwan
2. Warin Wanpare, Thailand
3. Charleston Dale M. Ambata, Philippines
4. Thuenzang Choephel, Bhutan
5. Esteban Martínez Valverde, Costa Rica
6. Ernest Teye Matey, Ghana
7. R.A.D.K.Sampath, Sri Lanka
8. Siti Nadhirah Mohamad Rahim, Malaysia
9. Agbolade Olaide, Nigeria
10. Roshan Pandey, Nepal

Individual Report from the GS Workshop Participants

Participant: Ming-Xian Huang, Department of Electrical Engineering, NCKU, Taiwan.

Feedback:

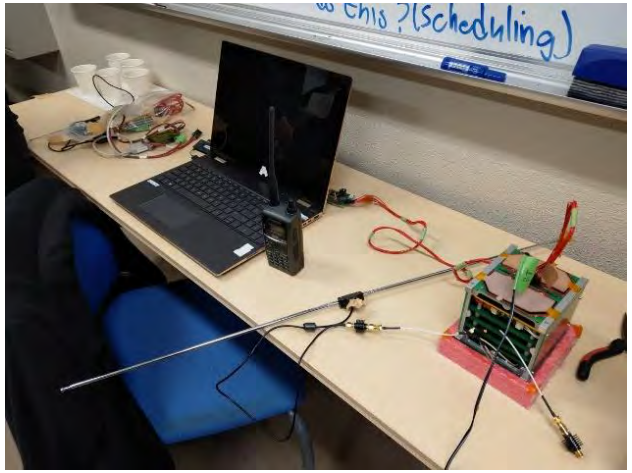
Different countries build their own ground stations and Cubesats, which is a very interesting concept. During this workshop, there are many topics for us to discuss together. For example, webserver for controlling components in ground station, demonstrating APRS mission and operating BIRDS-3 satellite. LoRa for BIRDS-3 is quite a interesting mission, configurable data rate makes the process more flexible. Automation is a really important issue for development of ground station, efficiency makes more achievements. I pretty enjoyed the open discussion of RWSN. Combined with S&F satellites, we can monitor our lands or even earth to prevent more damage because of disasters. For next workshop, I would like to do more operating test or demonstration.

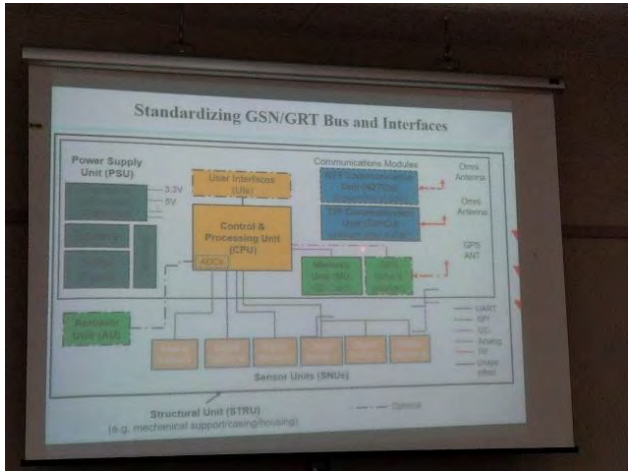
To sum up, the experience is memorable for me. I wish BIRDS-3 will success for its missions!

Continued on the next page

Individual Report from the GS Workshop Participants

Participant: Ming-Xian Huang, Department of Electrical Engineering, NCKU, Taiwan.





Individual Report from the GS Workshop Participants

Name: **Warin Wanpare**

Institute: The Sirindhorn International Thai-German Graduate School Of Engineering King Mongkut's University Of Technology North Bangkok

Country : Thailand

What you learn during the workshop

First thing I have to say i am new in this workshop but I learnt so many things in this workshop for example I know what the main reason of this workshop is, I learnt and knew about Ground Station system in Kyutech university and I will utilize this knowledge to improve my ground station at KMUTNB Thailand.

how do you feel

I feel thank you to this workshop. For 5 days in Ground Station Workshop I learnt a lot from this activity and I exchanged knowledge to anyone and got this knowledge to improve my ground station as well.

what part of the workshop you like

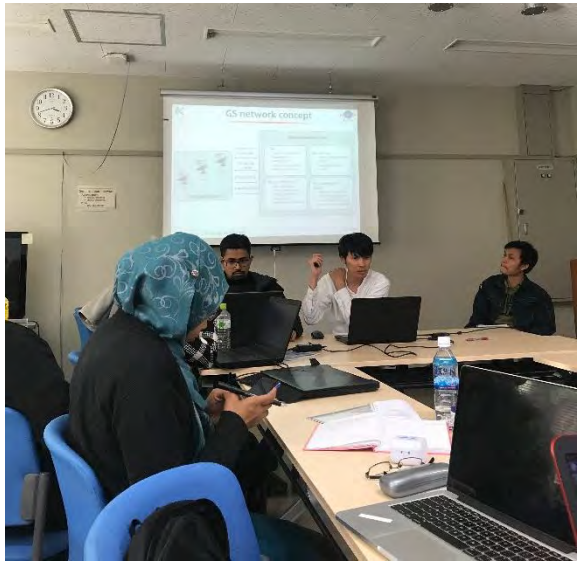
I like part of workshop is they use satellite to communicate between two users and I like they shown how to command satellite because I can see the real thing. The part in this workshop I like to much is they share and discuss by using knowledge to develop Ground Station system.

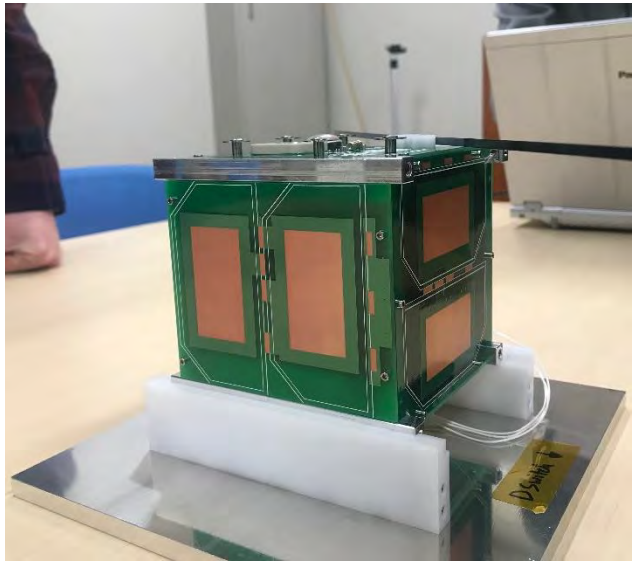
Continued on the next page

Individual Report from the GS Workshop Participants

Any suggest activities for add in the next workshop

if it is possible I would like to see real picture from satellite by taking photos from outside the world and I would like to know satellite's progress is going well or not.



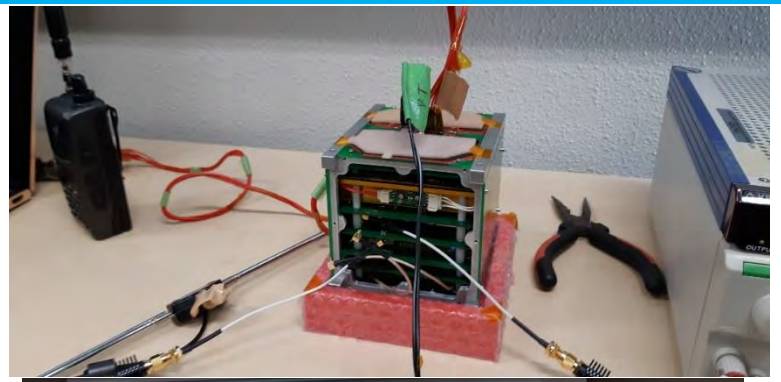


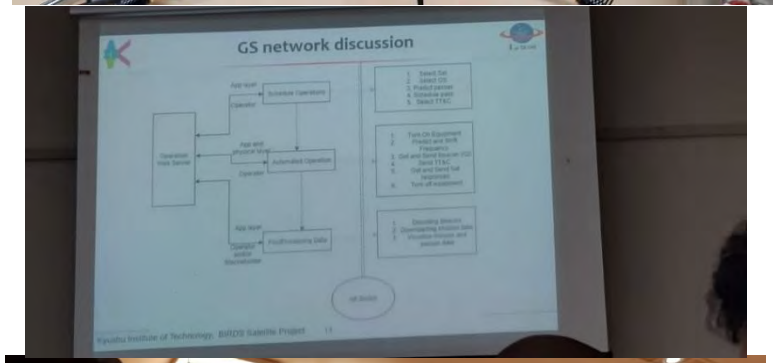
photos during the workshop

Thank you very much for this workshop which gives me knowledge a lot.

Individual Report from the GS Workshop Participants

- Name: **Charleston Dale M. Ambatali**
- Institute: **University of the Philippines, Electrical and Electronics Engineering Institute**
- Country: **Philippines**





I was thrilled to be a participant of the second GS workshop of the BIRDS project. I look to Japan and its population as a standard of discipline most especially with cleanliness and organization. The Kyushu Institute of Technology is such a beautiful and clean campus. It was just cold during the workshop.

The workshop reinforced what I have learned especially in the communications component of the ground station operation. I also experienced the feeling of working with such a diverse group of people. The best part of the workshop is the open discussions where everyone speaks up; most especially the discussion on the ground station network. A lot of ideas were presented and coming up with the general system design felt like conceptualizing an actual satellite where the interactions between subsystems must be explicitly defined. I expect more discussions in the future especially when each of the collaborating countries has developed each of their own stations.

If given the opportunity, I would love to attend future workshops. Overall, it was such a unique experience and I enjoyed every part of it.

Individual Report from the GS Workshop Participants

Submitted by:
Thuenzang Choephel
Engineer, Department of Information Technology and Telecom(DITT)
BHUTAN

The "**Second Ground Station Operation Workshop"** for the BIRDS project was organized by and held at the Kyushu Institute of Technology (KyuTech), Fukuoka, Japan from 23rd January to 28th January, 2019.

The Second Ground Station Operation Workshop concluded with discussions on the lessons learnt from BIRDS-1 and BIRDS-2 operation and its reflection on BIRDS-3. The knowledge acquired from the ground station operation workshop will be useful during the installation and operation of ground station for Bhutan-2 and BIRDS-3 satellite.

Finally, I would like to thank the organizers and the participants for making this event a successful one. This workshop was a good platform not only for me but also for all the other participants.
Hope to see you all in future.

Individual Report from the GS Workshop Participants

Submitted by:
Esteban Martínez Valverde

Costa Rica Institute of Technology (TEC)

Costa Rica

Please see my comments on the next page

Individual Report from the GS Workshop Participants

In this occasion the workshop represents a lot for me, because I had to present slides in three times, showing the work done in the cooperation between TEC and Kyutech, and been part of that is a great honor for me. The workshop also helps as a platform to the Remote Data Collection Group, to discuss and redefining several concepts that in virtual meetings may not be so efficient.
My favorite two activities of the workshop were the Mission proposal activity and the Technical Panel Discussion with Dr. Cho, since it promotes the critical analysis of future work. But in general, I'm very happy and thankful of being able to participate in the workshop this year. Thank you very much to all the workshop staff, it was a success!

My suggestions for the workshop can be divided in four:

1) **More Technical Panel Discussions**: since each year the participants have more knowledge, they can have more participation in the research discussions for future jobs and new missions. This can be divided into topics, and each participant can choose the one that best suits their area / field / knowledge. This can also apply to first-time participants.
2) **Documents as output of the workshop:** These documents must be generated by participants and guided by the workshop staff. It could be one document for each Technical Panel discussion or just one document with the a summary of all discussions throughout the workshop.
3) **Workshop presentations:** In my case (and I saw some participants too), I took pictures of some slides from presentations with my phone, because I needed the information. If possible, should be a good a idea to have access of all presentations given during the workshop.
4) **Multicultural activity:** Since there are more than 10 different countries participating in the workshop, it could be a good experience to have a dinner or launch, where participants bring something from their countries to share with other participants. It's always a good idea spaces focused on sharing culture

Individual Report from the GS Workshop Participants

Name : Ernest Teye Matey

Institution: All Nations University College

Country: Ghana

Purpose of Participation : To learn more about BIRDS 2, 3 ,4 ground station configurations and operations and to know the update from the BIRDS ground station operation from other countries especially those who are now building theirs.

General Impression about Workshop: The workshop was packed with many educative activities and also some practical demonstrations. Generally, it was very good.

Continued on the next page

Individual Report from the GS Workshop Participants

My key interest points :

1. The new configuration of BIRDS 3 satellite which will operate for downlink without an uplink command. This is a very good plan and will boost mission success.
2. The group work on the store and forward mission proposal was a good initiative
3. The update from the Nigeria ground station which is almost ready for operation is encouraging.
4. The inclusion of Nepal and Sri Lanka in the ground station network.
5. Panel discussion on the proposal for standardization.

Pictures:

Individual Report from the GS Workshop Participants

Name :**R.A.D.K.Sampath.**

Institute : **Arthur C Clarke Institute for modern technologies ,Katubedda , Moratuwa.**

Country : **Sri Lanka.**

learnt during the workshop

- Local Ground station installation.
- Satellite operation using BIRDS-3 Engineering Model.(Sat Communication).
- Satellite Tracking Operation.
- About Lora Transceiver Module and operation.
- About BIRDS satellite constellation and there Applications and introduce the missions.(ie. Sensor network , Remote data collection .)

Field Excursion

- Got know about Japanese food.
- Visited to Japanese ancient places.
- Got to know about Japanese culture.

Continued on the next page

Individual Report from the GS Workshop Participants

How do you feel ?

It was very Attractive and knowledge full one. Every presenters did not hesitate to share their knowledge and experience. It was a wonderful period that I had been gained.

what part of the workshop you like ?

Nothing Special one , every thing was essential and interested.

suggest activities for add in the next workshop

Could you please increase the number of session in GS Satellite tracking.

Individual Report from the GS Workshop Participants

Date: 03/02/2019

Name: **Siti Nadhirah Mohamad Rahim**

Institute: **Universiti Teknologi MARA (UiTM), Shah Alam**

Country: **Malaysia**

Report for:

Second Ground Station Operation Workshop – Organized by Kyushu Institute of Technology (Kyutech), Japan

Thank you very much to the committee members of Kyutech and JSPS for inviting me to participate in the 2nd ground station operation workshop. This was my second time attending the workshop which located at Kyushu Institute of Technology (Kyutech), Japan. This workshop introduced me to several new representatives of BIRDS Project's participated countries, and they presented the space activities/programs at their institutions and countries. It was a fruitful technical knowledge and experience sharing session.

Continued on the next page

Individual Report from the GS Workshop Participants

The workshop tentative was filled with technical discussion and demonstration on the current operation and future planning of ground station and CubeSat. Discussion sessions were conducted on ways to automate the satellite ground station operation and to improve the operation of the ground station network. Many ideas were brainstormed as participants conveying their experience with satellite and ground operation. In addition, during the workshop, few BIRDS-3 members taught us the BIRDS-3'S EM CubeSat operation using BIRDS-3 GS software and it was an inspiring experience for me as part of the amateur satellite ground station operator. The ground station operation and technology demonstration sessions were one of my favorite sessions.

I would like to extend my heartfelt gratitude to the organizer and BIRDS members for organizing the workshop and the time spent for us. Thank you for organizing the excursion day (I am very happy to be part of the great outing together and got to know many new friends). Thank you also for sharing us the memento photos of the workshop. Arigatou gozaimasu!

Individual Report from the GS Workshop Participants

NAME: AGBOLADE OLAIDE

INSTITUTION: FEDERAL UNIVERSITY OF TECHNOLOGY, AKURE

COUNTRY: NIGERIA

The second ground station workshop was a follow-up on the first edition of the workshop held in 2018. I was lucky to be one of the few participants that attended both workshops. The trainings and presentations were spot-on and the discussion session was very educative. I particularly liked the session where each group was given a project to work on and develop, as it afforded me the opportunity to brainstorm with different brilliant minds. Our visit to Mojiko station is one of the highlights of the workshop, and the experience will remain with me for a long time. I was also very pleased with the opportunity to meet students from other parts of the world. Overall, the workshop presented me an amazing learning opportunity.

Subsequently however, I recommend that the practical sessions be extended to allow for exchange and development of ideas. Also, certificate of attendance should be given to every participant. It might prove to be very defining for our young career. A big thank you to everyone who made the workshop a success. Japan will always be warmly remembered by us all.

Continued on the next page

Individual Report from the GS Workshop Participants

Individual Report from the GS Workshop Participants

Reported by Roshan Pandey, Faculty of Technology, Nepal Academy of Science and Technology

This workshop pertains to train the member of the different 13 participant countries to build ground station for the respective countries. Representatives were entertained with the series of lectures & presentations and group discussions were held. This event acted as a platform for a capacity building to set up the ground stations which would facilitate communications back and forth with our satellite. As a member of the BIRDS-3 project, this event holds a significant importance to us, Nepalese; to build a first ever ground station for our Nano-satellite.

Way forward and Recommendations

Nepal expects future events like this to add our existing competency of skills and knowledge so that our handling and operation of satellite data would be enhanced in the future. This holds paramount importance to us because our satellite would be deployed in the space on April 17, 2019, and we are committed to establishing a fully operating ground station till that time. We are willing to learn and cooperate with Japanese Kyushu Institute of Technology and would be delighted to hold conferences here in our country in the future.

Furthermore, the opening and closing ceremony could be made to offer a bigger platform than it actually was. I would suggest the organizers invite representatives of universities and even professionals from JAXA so that we would have a broader area of discussions and brainstorming. This might lead to the generation of new ideas and could be beneficial to all the parties involved.

Finally, I would like to send my gratitude and appreciation to all the people involved turning this event into a success.

END OF INDIVIDUAL REPORTS

14. Fellowship Programme for Drop Tower Experiment Series" (DropTES)

Fellowship Programme for "Drop Tower Experiment Series" (DropTES)

THE APPLICATION FOR SIXTH CYCLE IS NOW OPEN! DEADLINE EXTENDED TO 31 MARCH 2019 AT 23:59 CET

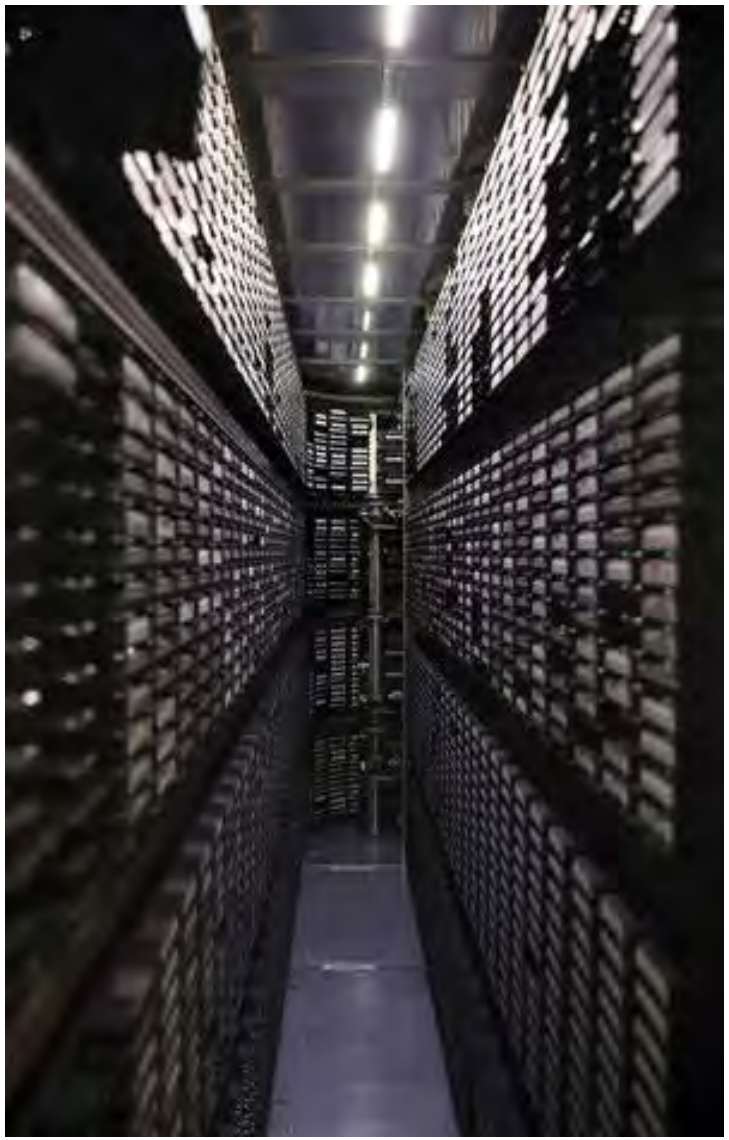
EDITOR: APPLY IN THE NEXT ROUND

The Drop Tower Experiment Series is a fellowship programme of the United Nations Office for Outer Space Affairs (UNOOSA) in which students can learn and study microgravity science by performing experiments in a drop tower. The Bremen Drop Tower in Germany is a ground-based laboratory with a drop tube of a height of 146 meters, which can enable short microgravity experiments to be performed in various scientific fields, such as fluid physics, combustion, thermodynamics, material science and biotechnology.

In collaboration with the Center of Applied Space Technology and Microgravity (ZARM) and the German Aerospace Center (DLR), the fellowship programme offers a selected research team the opportunity to conduct its own microgravity experiments at the Bremen Drop Tower. The series of experiments will consist of four drops or catapult launches during which approximately 5 or 10 seconds of microgravity, respectively, are produced.

For details see: http://www.unoosa.org/oosa/en/ourwork/psa/hsti/capacity-building/droptes.html

15. Important message to all former students of BIRDS Projects (mainly BIRDS-1 and BIRDS-2)



We are seeking to put all BIRDS-related publications (journal papers, conference papers, magazine articles, etc.) in one place so that anyone can view them with ease.

This effort is being organized by the members of BIRDS-4. We appeal to you for your cooperation on this important matter.

BIRDS-4
JOINT GLOBAL MULTI-NATION BIRDS SATELLITE PROJECT

Please contact Mr. Yigit Cay (BIRDS-4) cay.yigit978@mail.kyutech.jp if you can offer material to this archive.

16. S-Booster Space Competition offers big cash prizes

Main web site: https://s-booster.jp/en/

Big cash prizes are being offered – see next page

Organized by the
Cabinet Office of Japan

Entry Space-based business idea

Application: From March 1, 2019 to April 21, 2019, 5pm (JST)

S-Booster Objectives

S-Booster is looking for new business ideas to utilize space assets from those who aim for launching a new project in the company or starting his or her own business. Through mentoring by space business experts, the selected entrants will receive support such as how to commercialize an idea and to capitalize it. S-Booster finalists will be presenting their own business ideas directly to investors and business companies who are keen to support great space projects, where we believe organic matching happen to realize subsequent commercialization of the great ideas.

In its third year, **S-Booster 2019** will expand the recruitment area to Asia - Oceania region and invite space and business ideas broadly.

Qualifying sessions will be held separately for those from Japan and from other Asian region, and those who are selected from each session will proceed to Final Presentations held in Tokyo on November 25, 2019.

Main web site: https://s-booster.jp/en/

17. Media coverage of BIRDS-3 by Sri Lanka

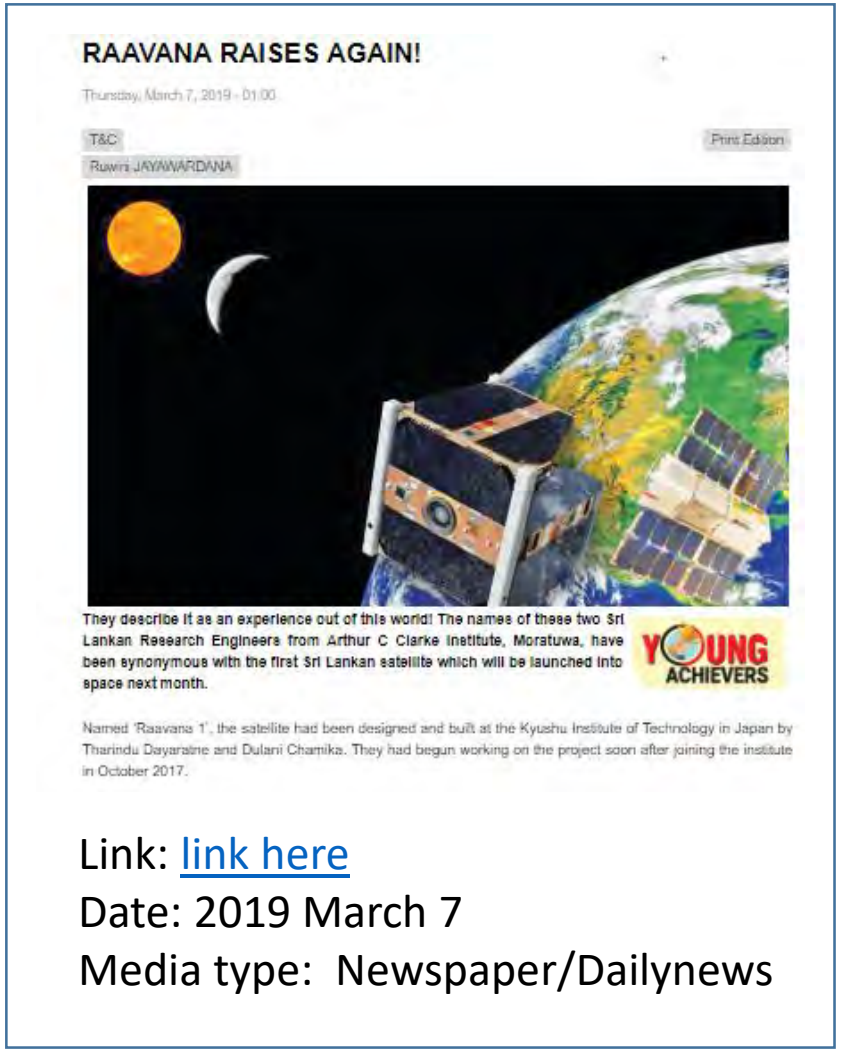
This section by Dulani (BIRDS-3, Sri Lanka)

This news says RAAVANA-1 is the first satellite in Sri Lanka.

Link : Link here

Date: 2019 Feb 16

Media type: TV channel



RAAVANA RAISES AGAIN!

Thursday, March 7, 2019 - 01:00

T&C

Print Edition

Ruwini JAYAWARDANA

They describe it as an experience out of this world! The names of these two Sri Lankan Research Engineers from Arthur C Clarke Institute, Moratuwa, have been synonymous with the first Sri Lankan satellite which will be launched into space next month.

YOUNG ACHIEVERS

Named 'Raavana 1', the satellite had been designed and built at the Kyushu Institute of Technology in Japan by Tharindu Dayaratne and Dulani Chamika. They had begun working on the project soon after joining the institute in October 2017.

Link: link here

Date: 2019 March 7

Media type: Newspaper/Dailynews

CONTINUED ON THE NEXT PAGE

This news says that we had the official press conference in Kyutech
Link : Link here
Date: 2019 Feb 16

Media type: TV channel

මෙම චන්ද්‍රිකාව මාධ්‍ය වෙත හඳුන්වා දීම පසුගිය සිකුරාදා (පෙබරවාරි 15) සිදුකෙරුණු අතර, ඒ සම්බන්ධයෙන් සම්මන්ත්‍රණයක් ද ක්‍යුෂු තාක්ෂණ ආයතනයේදී (Kyushu Institute of Technology) පැවැත්විණි.

Link : Link here
Date: 2019 Feb 16

Media type: Website/BBC

18. JAXA Engineers Akagi and Goto visited Kyutech on 12 March 2019

Above: At 13:45, Engineer Akagi gave a farewell speech to SEIC students in English

Above: Eng. Goto was introduced by Eng. Akagi.
Below: Eng. Akagi received official BIRDS Calendar.

Above and right: Eng. Akagi received *Letter of Appreciation*（感謝状) from the staff and students of SEIC.

THIS LETTER IS REPRODUCED ON THE NEXT THREE PAGES

A Letter of Appreciation

（感謝状）

11 March 2019

We the undersigned express our gratitude to **JAXA Engineer Akagi** for many years of dedicated service in support of deploying Kyutech satellites via the International Space Station. The relevant satellites are:

- **BIRDS-1, -2, and -3**
- **Irazu (Costa Rica)**
- **UBAKUSAT**
- **SPATIUM-I**
- **Aoba-Velox-III**

Cont'd next page

1. 前田大二 ____ (Name: G. Maeda)
2. ____ (Name: K. Aheieva)
3. ____ (Name: L. Cordova)
4. ____ (Name: N. Cihan Orger)
5. ____ (Name: Ibukun Adebolu)
6. Apirat J. ____ (Name: Apirat Jirawattanaphol)
7. ____ (Name: Yeshey Choden)
8. ____ (Name: SYAZANA BASYIRAH MOHAMMAD ZAKI)
9. ____ (Name: Pooja Lepcha)
10. ____ (Name: Tharindu Lakmal)
11. ____ (Name: Dulani Chamika)
12. ____ (Name: Maisun Monowar)
13. 柿本 ____ (Name: 柿 Yuta Kakimoto)
14. ____ (Name: ABHAS MASKEY)
15. Juan Rojas ____ (Name: Juan Rojas)
16. 上村友樹 ____ (Name: Tomoki Uemura)
17. 佐々木悠二 ____ (Name: Yuji Sasaki)
18. Makiko. K ____ (Name: Makiko Kishimoto)
19. 中山大輔 ____ (Name: Daisuke Nakayama)
20. ____ (Name: Hari Ram Shrestha)
21. ____ (Name: Israel Bautista)
22. ____ (Name: Yigit Cay)
23. 増井博一 ____ (Name: Hirokazu Masui)
24. 山内貴志 ____ (Name: Takashi Yamauchi)
25. ____ (Name: Bonsu Benjamin)
26. ____ (Name: Adrian Salces)
27. ____ (Name: Cheki Dorji)
28. Y. Takanaga ____ (Name: Yasuhiro Takanaga)
29. ____ (Name: RAHMI RAHMATILLAH)
30. ____ (Name: Kiran Kumar Pradhan)

Cont'd next page

31. 月成 早容 (Name: Sayo Tsukinari)
32. 河野 誠司 (Name: Seiji Kawano)
33. 白川 久美子 (Name: Kumiko Shirakawa)
34. 蜷川 遼太郎 (Name: Ryotaro Ninagawa)
35. 平賀 康太郎 (Name: Kotaro Hiraka)
36. 安島 久晴 (Name: Hisaharu Yasushima)
37. 孟 佑 (Name: MENGU CHO)
38. 福田 大 (Name: Hiroshi Fukuda)
39. _____ (Name:)
40. _____ (Name:)
41. _____ (Name:)
42. _____ (Name:)
43. _____ (Name:)
44. _____ (Name:)
45. _____ (Name:)

End of Letter of Appreciation

Engineer Akagi's successor（後任) is Eng. Goto


JAXA
Explore to Realize
MAR 12 2019
PMI PMP
Masayuki Goto
Associate Senior Engineer
JEM Utilization Center
Human Spaceflight Technology Directorate
Japan Aerospace Exploration Agency
TSUKUBA SPACE CENTER
2-1-1, Sengen, Tsukuba, Ibaraki, 305-8505 Japan
Tel.+81-50-3362-7614 Fax.+81-29-868-3950
Recycled Paper
goto.masayuki@jaxa.jp http://www.jaxa.jp

He also started last year his own company, called "Space Cubics, LLC" in Sapporo, Japan.

19. Dates of 4BIW, 4th BIRDS International Workshop, in Bangladesh

The venue and the dates of 4BIW are now official. 4BIW will be hosted by **BRAC University (Bangladesh)** during 25-28 November 2019 … as indicated by the letter at the right. Below, I present info and photos of the previous BIRDS international workshops.

1st BIRDS International Workshop (Kyutech, Japan)
Pages 4-18, Issue No. 6, BIRDS Project Newsletter.

2nd BIRDS International Workshop (ANUC, Ghana)
Pages 58-99, Issue No. 23, BIRDS Project Newsletter.

3rd BIRDS International Workshop (NUM, Mongolia)
Pages 104-149, Issue No. 31, BIRDS Project Newsletter.

Brac University

BRAC UNIVERSITY
Inspiring Excellence

March 13, 2019

Professor Mengu Cho
Director
Laboratory of Spacecraft Environment Interaction Engineering
Kyushu Institute of Technology
Kitakyushu, Japan

Dear Professor Cho,

BRAC University is pleased to propose hosting the 4th BIRDS International Workshop to be held in Bangladesh on November 25 to November 28, 2019. We will be delighted to welcome you and delegates of our BIRDS Partner countries in November for sharing ideas and planning the future of BIRDS network. We are always grateful to Kyushu Institute of Technology for their support to our satellite research activities.

We are looking forward to hearing your response as soon as possible.

Sincerely

Professor M. Tamim
Pro-Vice Chancellor

20. In what language should you educate your kids?

A lot of research is emerging that strongly suggests that kids should taught in their mother tongue – not in English. The item at the right is from ***The Economist*** of 23 Feb 2019.

English-medium education

Babel is better

The Economist February 23rd 2019

Young children should be taught in their mother tongue, not in English

WHEN WINSTON CHURCHILL was at Harrow School, he was in the lowest stream. This did not, he wrote in "My Early Life", blight his academic career, for "I gained an immense advantage over the cleverer boys. They all went on to learn Latin and Greek and splendid things like that...We were considered such dunces that we could learn only English...Thus I got into my bones the essential structure of the ordinary British sentence—which is a noble thing."

Partly thanks to Churchill and the post-war Anglo-American ascendancy, English is these days prized, not despised. Over a billion people speak it as either their first or second language; more still as a third or fourth language.

English perfectly exemplifies the "network effects" of a global tongue: the more people use it, the more useful it is. English is the language of international business, law, science, medicine, entertainment and—since the second world war, to the fury of the French—diplomacy. Anybody who wants to make their way in the world must speak it. All of which has, of course, been of great benefit to this newspaper, which has floated on a rising linguistic tide.

It is not surprising that there is a surge in "English-medium" education all over the world. In some regions—such as East Asia and Latin America—the growth is principally among the rich. In others—Africa and South Asia, where former colonies never quite escaped the language's grip—it is happening at all income levels. Parents' desire for their children to master English is spurring the growth of private schooling; parents in the slums of Delhi and Lagos buy English-medium education in the hope that their children will gain a university degree, obtain good jobs and even join a glittering world of global professionals.

Where the private sector leads, governments are following. Some countries have long chosen to teach in English as a political expedient, because a local language would prove contentious. But even where public schools teach children in their mother tongue, or a local language, education authorities are switching to English medium, in part to stem the outflow of children into the private sector. That has happened in Punjab and Khyber Pakhtunkhwa in Pakistan; many Indian states have started large or small English-medium experiments. In Africa most children are supposed to be taught in a local language in the first few years, but often, through parental pressure or a lack of textbooks, it does not happen.

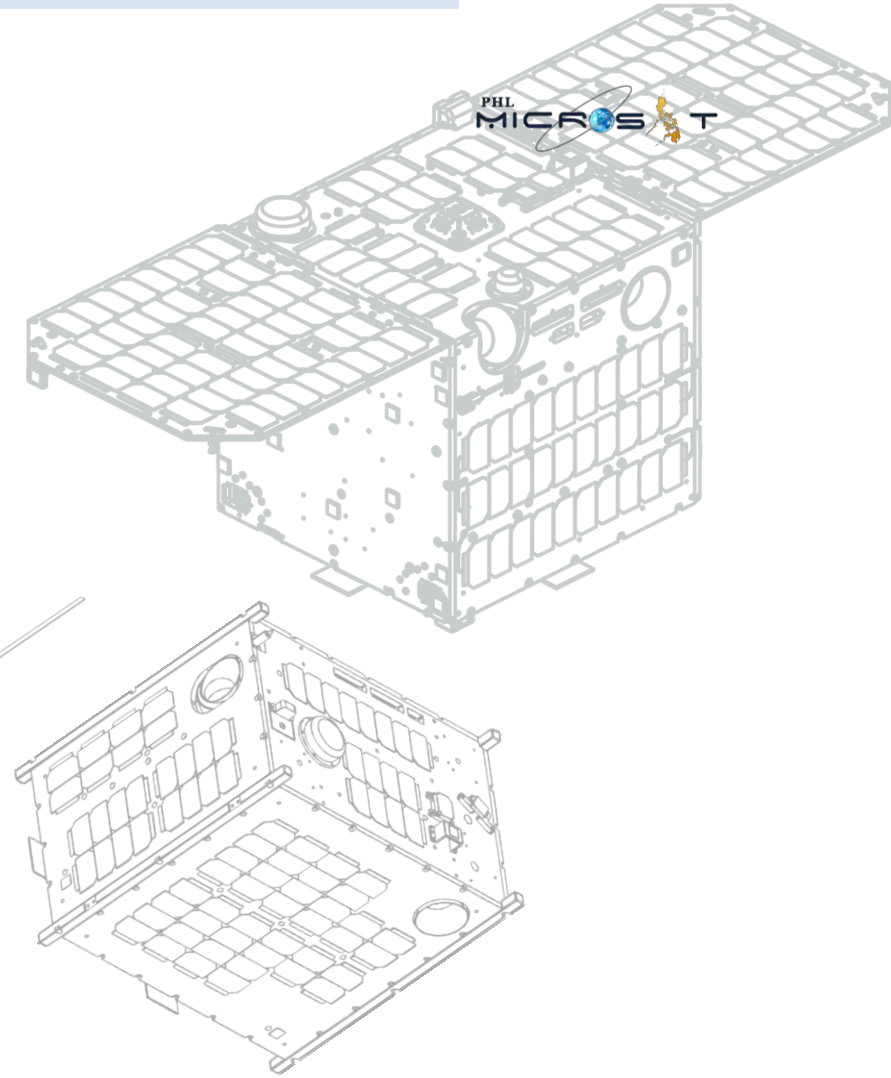
Teaching children in English is fine if that is what they speak at home and their parents are fluent in it. But that is not the case in most public and low-cost private schools. Children are taught in a language they don't understand by teachers whose English is poor. The children learn neither English nor anything else.

Research demonstrates that children learn more when they are taught in their mother tongue than they do when they are taught in any other language (see International section). In a study of children in the first three years in 12 schools in Cameroon, those taught in Kom did better than those taught in English in all subjects. Parents might say that the point is to prepare children for the workplace, and that a grasp of English is more use than sums or history. Yet by year five the children taught in Kom outperformed English-medium children even in English. Perhaps this is because they gain a better grasp of the mechanics of reading and writing when they are learning the skills in a language they understand.

English should be an important subject at school, but not necessarily the language of instruction. Unless they are confident of the standard of English on offer, parents should choose mother-tongue education. Rather than switching to English-medium teaching, governments fearful of losing custom to the private sector should look at the many possible ways of improving public schools—limiting the power of obstructive teachers' unions, say, or handing them over to private-sector managers and developing good curriculums and so on.

Pakistani Punjab has decided to end the English experiment; Uganda has introduced mother-tongue instruction in 12 different languages in the first four years of schooling. More should follow. After all, it was a good education in his mother tongue, rather than in the classics then favoured by the British aristocracy, that won Churchill the Nobel prize for literature. ■

UPDATES FROM THE PHILIPPINES



March 15, 2019

University of the Philippines-Diliman
Quezon City, Philippines

PREPARED BY:
Mae Ericka Jean C. Picar
PHL-Microsat/STAMINA4Space Communications Officer
Graphic Artist and Contributing Writer

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PHL-Microsat/STAMINA4Space Communications Officer
Contributing Writer and Editor

March Visitors

STAMINA4Space, DOST-ASTI host series of activities for visiting professors

The STAMINA4Space Program's Space Science and Technology Proliferation through University Partnerships (STeP-UP) Project and the Department of Science and Technology - Advanced Science and Technology Institute (DOST-ASTI) organized a series of activities for visiting Kyutech professors, Prof. Mengu Cho and Dr. Sangkyun Kim of the Laboratory of Spacecraft Environment Interaction Engineering (LaSeine). Coinciding with their visit are those of Prof. Monai Krairiksh from King Mongkut's Institute of Technology and Prof. Zhongxiang Shen from the Nanyang Technological University (NTU).

In photo (left to right): STeP-UP Project Leader Engr. Paul Jason Co, DOST-ASTI Acting Director Dr. Joel Joseph Marciano Jr., Prof. Monai Krairiksh, University of the Philippines Diliman (UPD) Chancellor Michael Tan, Prof. Mengu Cho and Prof. Zhongxiang Shen.

Antenna Propagation Society Talk

By Prof. Dr. Monai Krairiksh and Prof. Zhongxiang Shen

On March 4, 2019, 1:30pm-3:00pm at the Astec Multimedia Lecture Hall (LC2) of the UPD Electrical and Electronics Engineering Institute, the guest professors gave a talk on their fields of expertise.

About the visiting professors

Prof. Monai Krairiksh was born in Bangkok, Thailand. He received the B.Eng., M.Eng. and D.Eng. degrees in electrical engineering from King Mongkut's Institute of Technology Ladkrabang (KMITL), Thailand in 1981, 1984, and 1994, respectively. He was a visiting research scholar at Tokai University in 1988 and at Yokosuka Radio Communications Research Center, Communications Research Laboratory (CRL) in 2004. He joined the KMITL and is currently a Professor at the Department of Telecommunication Engineering. He has served as the Director of the Research Center for Communications and Information Technology during 1997-2002. Dr. Krairiksh was the chairman of the IEEE MTT/AP/Ed joint chapter in 2005 and 2006. He served as the General Chairman of the 2007 Asia-Pacific Microwave Conference, and the 2017 International Symposium on Antennas and Propagation. He was the President of the Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology Association (ECTI) in 2010 and 2011 and was an editor-in-chief of the ECTI Transactions on Electrical Engineering, Electronics, and Communications. He was recognized as a Senior Research Scholar of the Thailand Research Fund in 2005 and 2008 and a Distinguished Research Scholar of the National Research Council of Thailand. He served as a distinguished lecturer of IEEE Antennas and Propagation Society during 2012-2014.

Prof. Zhongxiang Shen received the B. Eng. degree from the University of Electronic Science and Technology of China, Chengdu, China, in 1987, the M. S. degree from Southeast University, Nanjing, China, in 1990, and the PhD degree from the University of Waterloo, Waterloo, Ontario, Canada, in 1997, all in electrical engineering. From 1990 to 1994, he was with Nanjing University of Aeronautics and Astronautics, China. He was with Com Dev Ltd., Cambridge, Canada, as an Advanced Member of Technical Staff in 1997. He spent six months each in 1998, first with the Gordon McKay Laboratory, Harvard University, Cambridge, MA, and then with the Radiation Laboratory, the University of Michigan, Ann Arbor, MI, as a Postdoctoral Fellow. In Jan. 1999, he joined Nanyang Technological University (NTU), Singapore, as an assistant professor, where he is currently a Full Professor in the School of Electrical and Electronic Engineering. Dr. Shen served as the Chair of the IEEE MTT/AP Singapore Chapter in 2009. He was the Chair of IEEE AP- S Chapter Activities Committee from Jan. 2010 to July 2014. He was the Secretary of the IEEE AP-S from July 2014 to Dec. 2018 and is currently serving as an Associate Editor of the IEEE Transactions on Antennas and Propagation.

Courtesy call with UP OFFICIALS

In photo (left to right): Prof. Monai Krairiksh, Prof. Mengu Cho, UPD President Danilo L. Concepcion, Prof. Zhongxiang Shen, DOST-ASTI Acting Director/STAMINA4Space Program Leader Dr. Joel Joseph Marciano Jr., and STeP-UP Project Leader Engr. Paul Jason Co.

Courtesy call of Prof. Mengu Cho with UPD Chancellor Dr. Michael Tan.

Courtesy call of Prof. Mengu Cho, Prof. Monai Krairiksh, and Prof. Zhongxiang Shen with UPD President Danilo L. Concepcion. Held in the University of the Philippines Diliman, Quezon City, Philippines.

In photo (left to right): STeP-UP Project Embedded Systems Engineer Mary Ann Zabanal, Dr. Michael Tan, Prof. Mengu Cho, Dr. Joel Joseph Marciano, Jr., and PHL-50 Project Leader Dr. Marc Talampas.

Courtesy call with DOST OFFICIALS

Prof. Mengu Cho paying a courtesy call to DOST Secretary Fortunato dela Peña.

In photo(from left to right): Engr. Joven Javier, Dr. Joel Joseph Marciano, Jr., DOST Secretary Fortunato dela Peña, Prof. Mengu Cho and Engr. Paul Jason Co.

Courtesy call of Prof. Mengu Cho together with the eight STeP-UP Project Scholars and members of the University Consortium (Mindanao State University-Iligan Institute of Technology and University of San Carlos) with DOST Assistant Secretary Leah Buendia and Deputy Director of the DOST- Science Education Institute (SEI) Albert Mariño. Held at the DOST National Capital Region Office, Metro Manila, Philippines.

Lectures on Small Satellites

Space Systems Engineering Lecture

By Prof. Mengu Cho

05 March 2019

Meralco Hall

Electrical and Electronics Engineering Institute

University of the Philippines DIliman

Mission Requirements, PBS & WBS, Requirement Management

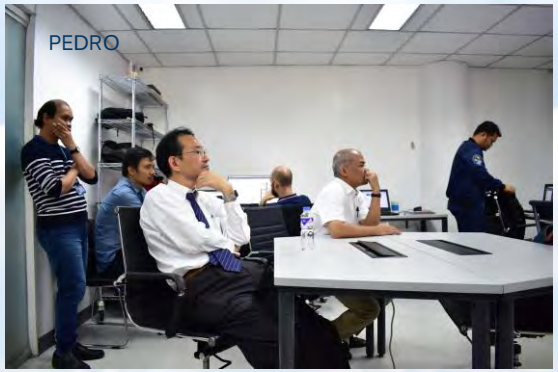
By Prof. Mengu Cho

06 March 2019

Advanced Science and Technology Institute

Department of Science and Technology

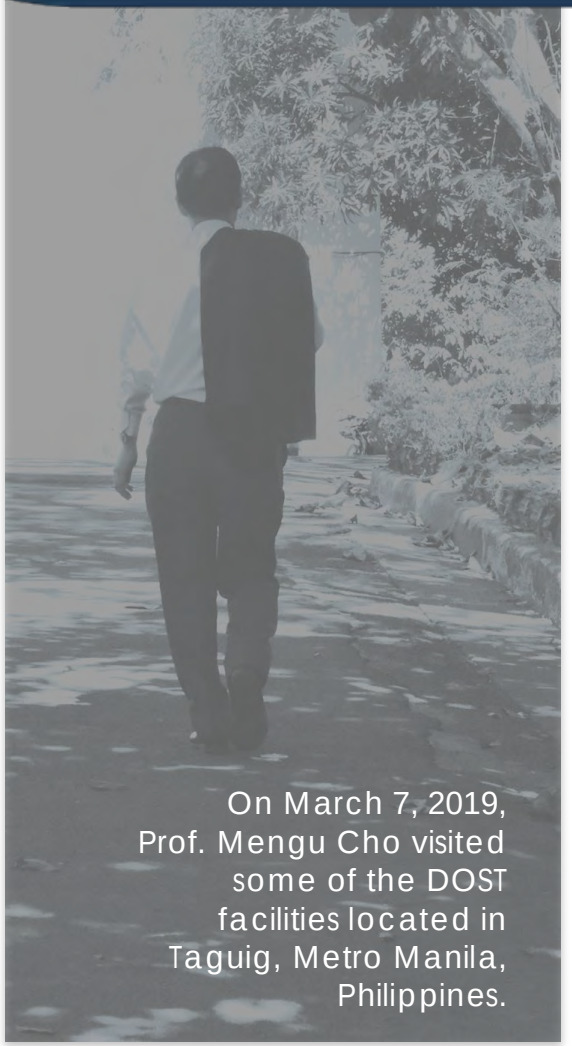
DOST Facility Tour



Prof. Mengu Cho's visit at the Philippine Earth Data
Resource Observation Center or PEDRO (left)
and the Philippine Nuclear Research Institute or PNRI (right)

Inset photo: PEDRO Center
From left to right: Dr. Joel Joseph Marciano, Jr., Prof. Mengu Cho, Engr. Joven Javier

DOST Facility Tour



On March 7, 2019, Prof. Mengu Cho visited some of the DOST facilities located in Taguig, Metro Manila, Philippines.

ADMATEL
Advanced Device and Materials Testing Laboratory

EPDC
Electronics Product Development Center

MIRDC
Metals Industry Research and Development Center

DMME and EEEI Facility Tour

UP DMMME
UPD Department of Mining, Metallurgical, and Materials Engineering

UP EEEI
UP Electrical and Electronics Engineering Institute

Full Anechoic Chamber

UP-EEEI Laboratories

ULyS³ES - University Laboratory for Small Satellite and Space Engineering Systems

Prof. Mengu Cho also visited the facilities in the University of the Philippines Diliman.

Lecture on Small Satellites

Prof. Mengu Cho and Dr. Sangkyun Kim were the speakers for the Forum on Small Satellites: "Lean Satellite: A New Way of Making and Using a Satellite." This event aimed to raise awareness on the existing space technologies of the country, boost appreciation on the real-life benefits and applications of these space technologies, encourage the Filipino youth to pursue careers in STEM, and draw support for sustaining space-related activities. The forum was held on March 8, 2019 at the UP Institute of Biology Auditorium, Diliman, Quezon City.

In photo (left to right): Dr. Marciano, Dr. Kim, Prof. Cho and Engr. Co

Lecture Series on Small Satellites

Lecture on Small Satellites: Interactive Sessions

With Dr. Sangkyun Kim

11-14 , March 2019

Electrical and Electronics Engineering Institute
University of the Philippines DIliman

Among the topics discussed include ADCS (Attitude Determination and Control System), Satellite communication, Environmental tests and Safety review. The participants of these sessions are composed of researchers from the STAMINA4Space Program and DOST-ASTI, STeP-UP Project Scholars, and faculty members.

About the visiting professors

Professor Mengu Cho received his B.S. and M.S. degrees from the Department of Aeronautics and Astronautics, University of Tokyo, Tokyo, Japan, in 1985 and 1987, respectively, and histhe P.hD. degree from the Department of Aeronautics and Astronautics, Massachusetts Institute of Technology, Cambridge, MA, USA, in 1992. From 1992 to 1995, he was a research associate with Kobe University, Kobe, Japan. From 1995 to 1996, he was a Teaching Associates with International Space University, France. Since 1996, he had been with the Department of Electrical Engineering, Kyushu Institute of Technology (KIT), Japan, where he was an Assistant Professor in 1996 and Associate Professor in 1997. Since 2004, He has been a Professor and also the Director of the Laboratory of Spacecraft Environment Interaction Engineering (LaSEINE) of KIT. He has been with the Department of Applied Science for Integrated system engineering since 2010.

Dr. Sangkyun Kim received his B.S degree and M.S degree from Korea University, Korea in 1996 and 1998 and Ph.D degree from the Department of Aeronautics and Astronautics, University of Tokyo in 2009. He worked for Hyundai motor group as his military service from 1998 to 2005 and accumulated field engineering experience of small spacecraft at the venture company, Axelspace, from 2009 to 2014. From 2014 to 2016, he was a Postdoctoral Fellow in the Satellite Technology Research Center of KAIST, Korea. Since 2016, he has been an Assistant Professor in the Laboratory of Space Environment Interaction Engineering(LaSEINE). His research interests are small spacecraft development, attitude control, environmental test, and atmospheric reentry system.

ECE Roadshow 2019

The Electronics Engineering Department, through its student organization, Institute of Electronics Engineers of the Philippines' Technological Institute of the Philippines-Quezon City (IECEP TIP-QC) held its annual ECE Roadshow 2019 with the theme "Transforming Real-World Problems into Sustainable Innovative Solutions Bridging Our Way toward the Cities of the Future" from February 20-22, 2019 at the TIP-QC campus. One of the STAMINA4Space Program researchers, Engr. John Leur Labrador, was the keynote speaker for the event.

In photos : The event organizers and Engr. John Leur Labrador during his talk in the ECE Roadshow 2019.

Women's Month Feature: Mary Ann Zabanal-Constante

Women of Strength

March 09, 2019

SM City Manila

Mary Ann Zabanal-Constante, STeP-UP Project Embedded Systems Engineer, was invited to speak at SM Manila's Women's Month Campaign last March 9, 2019 in SM City Manila.

She talked about her role in the PHL-Microsat program and now with the succeeding program, STAMINA4Space Program, and shared her knowledge and experiences about working in the STEM field.

We will be highlighting more of our female team members in next month's issue.

Editor's note: Hey, Mary Ann, congratulations !

Grant Opportunities For Fundamental Research

Basic Research Grant Opportunity Talk

March 12, 2019

DOST-ASTI Quezon City, Manila, Philippines

Dr. Tony C. Kim from the Asian Office of Aerospace Research and Development (AOARD), under the Air Force Office of Scientific Research (AFOSR), gave an overview about the AOARD and how they can provide grant opportunities for fundamental (basic) research.

The AOARD is an international Air Force Research Laboratory (AFRL) facility for basic research in science and technology located in Tokyo, Japan. AOARD's mission is to discover, shape, and champion science and technology that profoundly impacts the future Air Force. Their goal is to build relationships and facilitate communication and collaboration, especially with AFOSR-related researchers. The AOARD supports its mission by funding grants for world-class fundamental research.

End of March report from UPD

22. M-JEED event in Mongolia, reported by BIRDS-1 member

1st Integrated Conference on Joint Research Program in Mongolia-2019 (ICJPM) 11-12 March 2019

Higher Engineering Education Development, (M-JEED) Project

Written by Turo of BIRDS-1
15 March 2019
Ulaanbaatar City, Mongolia

"The main purpose of ICJPM 2019 is to establish the base of future international conferences aimed at providing a platform for scientists, young researchers of M-JEED Joint research teams to present, review and discuss the outcomes of collaborative research activities between Mongolia and Japan since the beginning of M-JEED project."

Mr. D. Namsrai (ICJPM 2019 Chair, Project Coordinator)

Brief about M-JEED Project: To train skillful engineers, the Government of Mongolia, the Ministry of Education, Culture, Science and Sports, the Japan International Cooperation Agency have been jointly implementing 'A Higher Engineering Education Development Project' since 2014.

In the first seat row, VIPs from Government of Mongolia, Japanese Embassy, Nation University of Mongolia, Mongolian University of Science and Technology

Photo of posters in the lobby, there are 20 joint research projects introducing their works

It is difficult to imagine that opening ceremony without Morin khuur (traditional Mongolian music instrument)

Group photos of conference attendees, more than 30 Japanese professors came from different universities including Kyutech

Poster introduction about our joint research, and team members

Posters and Exhibitions in 2nd and 5th floor of the Library Building of National University of Mongolia

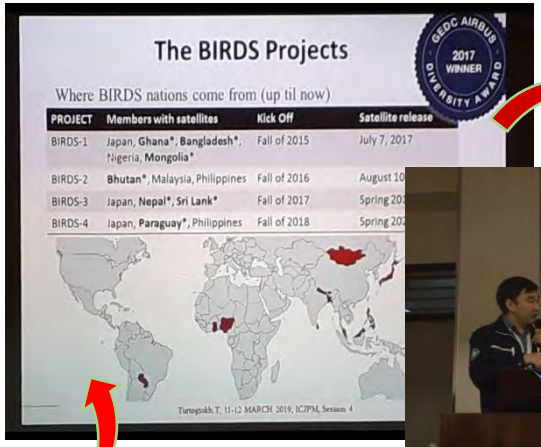
Master degree students are explaining about satellite and ACDS system

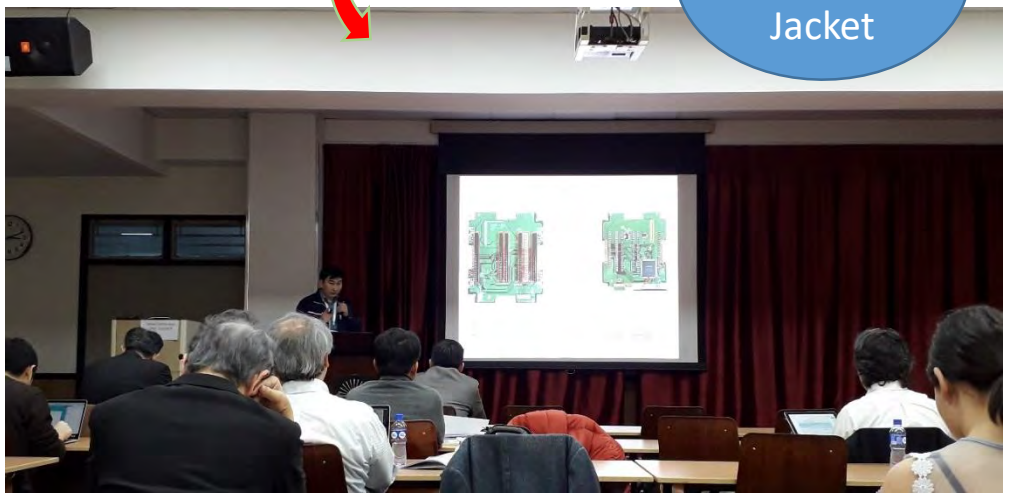
There were three presentations related to Kyutech

Prof. Hiroaki Wagatsuma, (Kyutech) talks about his Joint research, and brain Inspired Robotics

Prof. Ichiro Omura , (Kyutech) talks about power semiconductor for space application and current sensor for power electronics

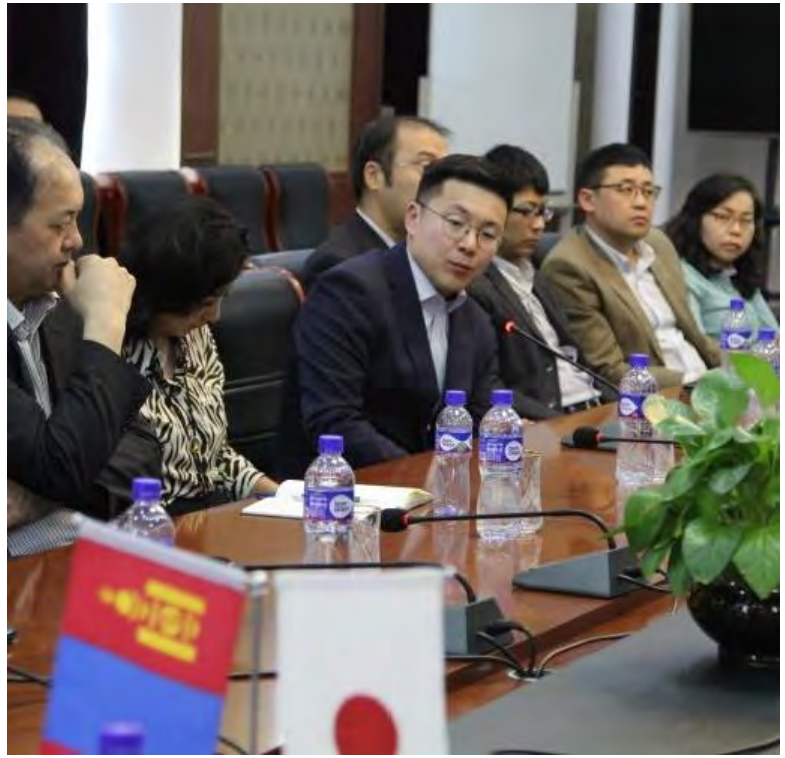
Turo (members of BIRDS-1 and Kyutech graduate) talks about BIRDS activities and Standardized backplane interface





NUM welcomes the delegates from Japan, and team leader of joint research projects

Prof. B. Ochirkhuyag (Vice President of NUM)



Dr. Erdenebaatar (Erka of BIRDS-1) in the middle of the picture. He is the team leader of one of the M-JEED projects

Some of the Japanese professors who are part of M-JEED project, and came for ICJPM 2019

End of report by Turo

23. High-level meeting between AEP and the President of Paraguay

http://www.aep.gov.py/
on 22 March 2019

Top officials of AEP:
From the left:

- Director General Roman
- Director General Kurita
- President Vielman

Seated at the desk is the president of Paraguay, President Mario Abdo Benítez

Continued on the next page

Where:
Presidential Palace, or "Lopez Palace", in Paraguay

When:
13 March 2019

AEP staff from the left: [1] Abg. Hebe Romero (Legal and Int´l affairs), [2] Prof. Alejandro Román (Execution and Aerospace Development), [3] Colonel Liduvino Vielman (President), Tte 1° , [4] Prof. Jorge Kurita (Planning and Management), and [5] AvC Lilia Gomez (Administration and Finance).

First Solar Sail Study in Turkey

Yiğit Çay

BIRDS-4

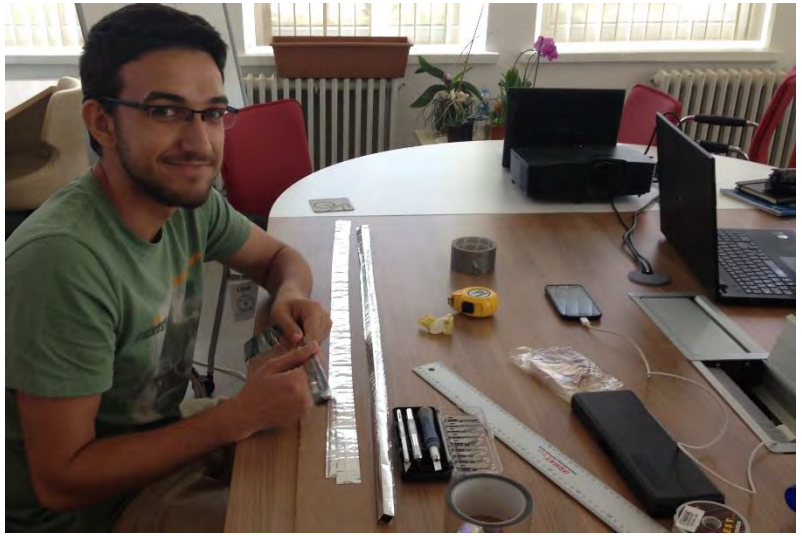
March 7, 2019

First Solar Sail Study in Turkey

Written By: Yiğit Çay

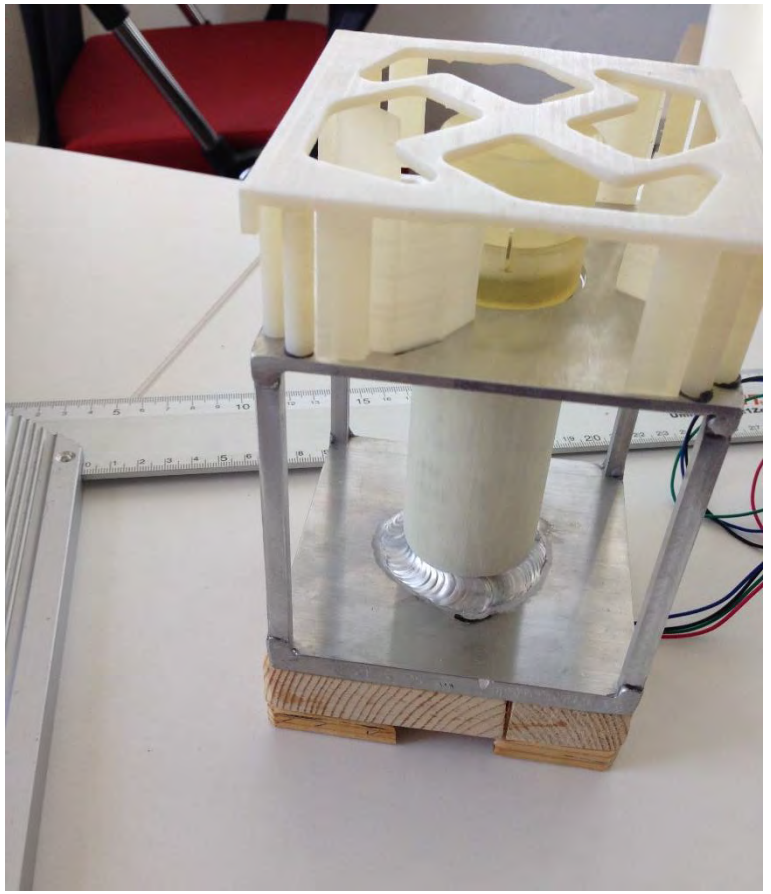
A solar sailcraft is the spacecraft that uses the solar radiation pressure force for acceleration and does not need any propellant other than the sunlight. PolarBeeSail (PBS) is designed as a solar sailcraft and a nanosatellite in 4U CubeSat shape and has 4m x 4m solar sail providing the satellite small but reasonable thrust levels. The PBS is a conceptual science-oriented spacecraft. Its main objective is to investigate the polar magnetospheric regions using a plasma analyzer and magnetometer. Its lifetime is planned as 11 years, which is equivalent to one solar cycle.

PBS was designed as a concept in Istanbul Technical University's (ITU) Upper Atmosphere and Space Weather Laboratory (UASWL) to initiate satellite…



Producing the solar sail's booms from Aluminum and Kapton tapes (August 2015)

…activities in the laboratory. Our team worked on the satellite's solar sail as well as its plasma analyzer designs. I designed a 1.3U deployment mechanism and we procured it for the experiments. 3D printed parts are utilized for the mechanism while the Aluminum cube is to demonstrate a CubeSat body frame.



Solar sail deployment mechanism on top of a 1U representative structure

First Solar Sail Study in Turkey

Written By: Yiğit Çay

PBS project was initiated in my previous lab with the funding provided by The Scientific and Technological Research Council of Turkey (TUBITAK) in September 2014-2015. Results of the project could be found in this link if you're interested in more details.

This project was the first study ever made regarding the solar sails in Turkey; therefore, as well as the international papers, we presented our findings in national Aerospace conferences to reach out the possible stakeholders of PBS in the future. Although the project is finalized after October 2015, recently, my friend and colleague in Astronautical Engineering department of ITU and I restarted this challenging study to define the satellite design further focusing on …

Logo of PolarBeeSail

…ADCS (attitude determination and control) aspect. Our paper abstract got recently accepted to be presented in the International Symposium on Solar Sailing in August 2019 in Aachen, Germany! Besides the time remaining from the busy schedule of BIRDS-4, I am going back to my old satellite design to review and to have fun!

¼ of solar sail ready to be folded and stowed

Before finalizing my article, I would like to give my bottom-heart gratitude to my previous advisor, Prof. Dr. Zerefşan Kaymaz for helping this intriguing project possible in UASWL.

My First Fishing Experience in Japan

Mark Angelo C. Purio
BIRDS-4
December 9, 2018

My First Fishing Experience in Japan

Written By: Mark Angelo C. Purio

Depiction of the line and hook. Photo taken from shutterstock.com

I grew up near an estuary, a place where the river and sea meets. As a child, my concept of fishing was going at our backyard with a coriander or dipper to catch small fishes swimming carelessly against the subtle current. As I come to age, fishing is actually far more than that. My father would let me ride our boat, bring me to a farther part of the sea, attach a fishing hook to a nylon string and would teach me to catch fish. While doing so, he would cast his net to the other side of the boat and wait patiently for the catch. Well, that's real fishing.

My natural pool at our backyard, where the river and the sea meets.

Our place in the Philippines as seen from a satellite image, courtesy of Google Earth.

With a lot of memories about fishing in mind, never have I imagined that I will also have a fishing experience here in Japan. According to guidable.co, this hobby is common in the country, especially on holidays when families, members young and old, swarm fishing spots all over Japan.

Being part of a Foreign Student Host Family Program, I am fortunate to have a Japanese foster family. I have been with them for almost 2 months now and we usually bond during the weekend. As most of other Japanese, my foster dad loves fishing so much and would always tell stories about different fishes he caught and what kind of fish he loves to eat.

My First Fishing Experience in Japan cont…

Written By: Mark Angelo C. Purio

Lake Toyoda situated amidst Yamaguchi Prefecture as seen from above. Courtesy of Google Earth

But experiencing is better than just hearing stories right? Lo and behold, they invited me to join their fishing rendezvous. Last December 2, Sunday, we went to Yamaguchi Prefecture for my first Japanese fishing experience. As the cold weather was apparent, I had the liberty to wear warm clothes just in case. It was a long 2-hour ride going to the lake since we went to a different prefecture. The road was scenic and very engaging. The fact that the view going to the lake is new to me, I opted not to sleep during the entire travel.

Our destination was Lake Toyoda situated in Yamaguchi Prefecture, Japan. We dropped by a fishing shop to buy stuff like worms and fishing hooks. Upon arrival, the place was breathtaking and very tranquil. Perfect to drive away the stresses brought about by research and study. As the cool breeze combined with the warmth of the sun touched my face, the lake view reminded me of what it feels like to live again near the sea. Nonetheless, everything seems so perfect at that time.

A breathtaking and perfect view of Lake Toyoda.

Around 12:30 in the afternoon, we had a sandwich for lunch and proceeded to the fishing area. For me, fishing is literally not exhilarating like other hobbies but it was definitely fun to do. As of writing, it taught me the following:

Ladder going to the fishing area.

- *Patience is really a virtue*. Catching the fish is not a mere leaving the fishing line in the lake and fish will eventually be caught. It takes time to catch one. For this, I learned to be patient and be open to possibilities that the fish might not be caught. At the end of the day, you can be enjoying the view while you wait.

My First Fishing Experience in Japan cont…

Written By: Mark Angelo C. Purio

- *Letting go could be the best part.* We intend to catch smelt, but we only caught bluegill. Although we caught a bunch of fishes, we still decided to bring them back to the water to live freely again. But while bringing them back to the water actually put a smile on my face.

Family picture overlooking the lake, before we leave.

More pictures!!!

My first catch. I am smiling but disappointed cause its small.

My foster father not really happy for his first catch.

Selfie with my foster mom while fishing.

Foster mom and dad super happy for what we did

Overall, the entire experience was very memorable and I am out of words to describe everything that happened. Needless to say, if given a chance to go fishing again I would definitely do it. Next time, I will catch a big one.

Remote Sensing Application for the Study of Insect Dispersion

Adolfo Jara

BIRDS-4

March 7, 2019

Remote Sensing Application for the Study of Insect Dispersion

Written By: Adolfo Jara

The species distribution models allow finding suitable areas for the development of the disease vectors with a low sampling effort either in time or in costs. Problems such as vector-borne diseases are increasingly associated with alterations in the environment that favor their appearance, reappearance, increase or even decrease or temporary or definitive disappearance. In most cases, the purpose of the statistical model is the prediction of the distribution of the species. Next, a panoramic epidemiology project is presented that takes as a case study the historical presence of the vector of Chagas disease in the indigenous communities of the Paraguayan Chaco.

The objective of this work is to determine the spatial distribution of triatomines based on the use of entomological and environmental variables using remote sensing tools.

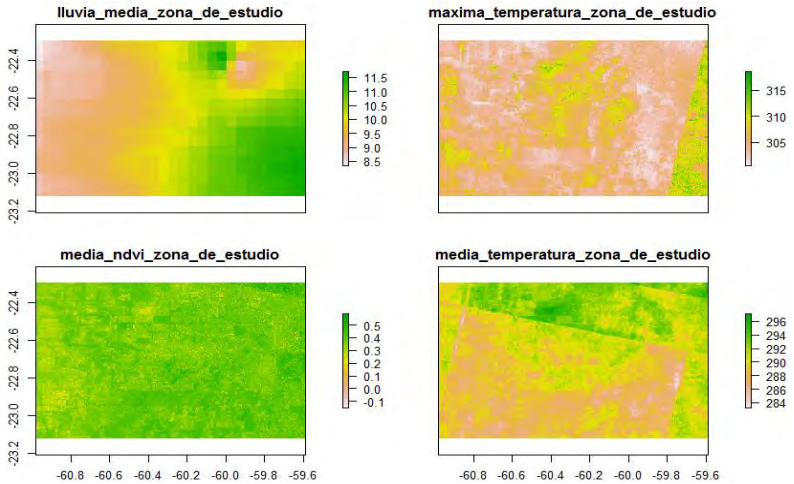
The work area for the development of this research is located in the central Chaco, approximately 400 km from Asunción, zone of influence of indigenous communities.

Representation of the study area - Elaborated using Google Earth Engine.

To determine the distribution, two main variables have been considered: the entomological variable (presence of Chagas disease vectors in the indigenous communities) and the environmental variables. For the entomological variable a total of 110 points of presence of the vector have been taken through manual collect of insects and the use of a real-time remote monitoring system for triatomine using traps with sensors wireless networking. For environmental variables were used: mean NDVI, mean temperature, maximum temperature and mean rainfall, all these derived from satellite images and obtained through the programming of a code written in java script in the Google Earth Engine.

Remote Sensing Application for the Study of Insect Dispersion

The objective is to estimate the similarity of the conditions in any place with the conditions in the locations of known occurrence of a phenomenon. A common application of this method is to predict the vectors presences points with climatic data as predictors.



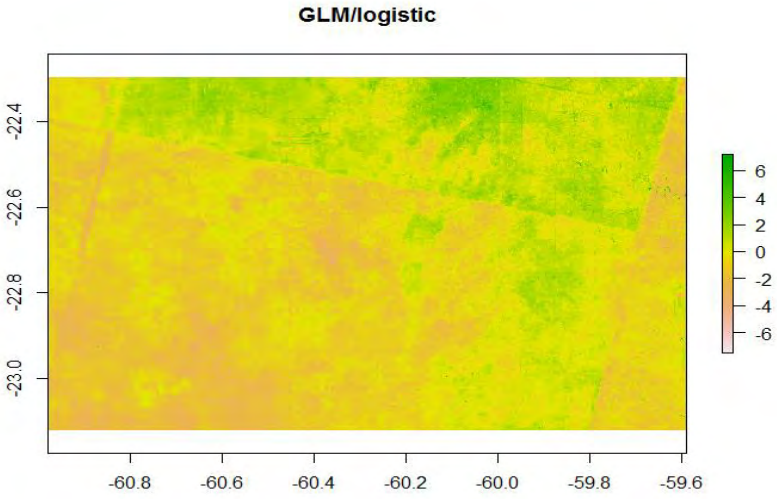
Prediction variables – Elaborated using RStudio.

The methodology used is described below:

- The presence locations of the vector were collected;
- The values of the environmental prediction variables (such as climate) were extracted for these places using the spatial databases;
- Environmental values were used to adjust a model that allows estimating the similarity of other sites with presence sites;
- A model was obtained that allows to predict the distribution of vectors in the region of interest.

As a result, a distribution model based on environmental variables has been obtained that predicts the suitable places for the studied triatomines to be present.

The obtained tool is able to serve for the ecological and epidemiological surveillance of the indigenous communities at risk, generating early warning systems and serving as a support to the authorities for decision making.



Map of suitability values – Elaborated using RStudio.

BIRDS-4
Perovskite solar cells and Research Collaboration with Ma laboratory

Izrael Zenar Bautista
BIRDS-4
March 7, 2019

What are Perovskite solar cells?

Written By: Izrael Zenar Bautista

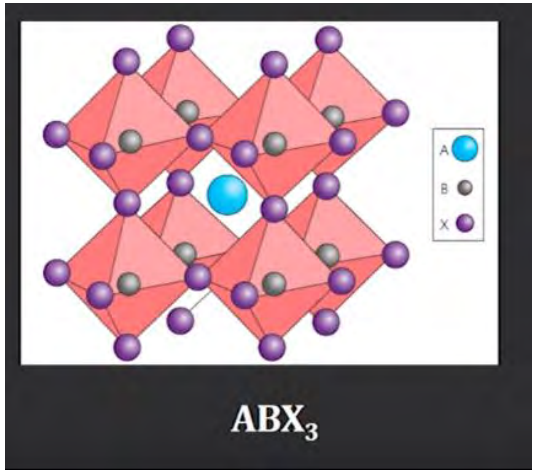
Majority of the satellites, specifically those that orbit earth, use solar cells as their primary power source. It's because solar cells are easier to handle compared to other sources such as nuclear or thermal energy sources. These satellite use either silicon based or Triple junction (InGaP/GaAs/Ge) solar cells which have energy conversion efficiencies of around 26-32%.

Triple junction solar cell being used in BIRDS project [Image source]

A triple junction cell would cost around 300-400$ per cell and you will need a lot of these to power a satellite, especially if it needs huge amount of power. This drives the research for cheaper solar cells with higher energy density (kW/kg) and higher conversion efficiency that would enable future space missions to have lower costs in terms of launch and manufacturing. In 2009, Miyasaka et al. presented the first Perovskite solar cell based on dye-sensitized solar cell structure which achieved a conversion efficiency of 3.8%. Since then, because of the low cost of manufacturing and potential as a energy source, numerous researchers have focused their attention on making a stable and efficient Perovskite solar cell.

The history of Perovskite dates back 1839, when a German scientist, Gustav Rose, discovered a Calcium titanate-based mineral in the Ural Mountains. This mineral was later named Perovskite, in honor of a Russian mineralogist Lev von Perovski. Since then, scientists have synthetically produced materials with the same structure for a number of purposes.

Understanding Perovskite cells, Tang, Z., uploaded on Youtube: February 2016. [source]



Collaboration with Ma Laboratory

Written By: Izrael Zenar Bautista

The Ma laboratory under the Graduate School of Life Science and Systems Engineering in the Wakamatsu Campus of Kyushu Institute of Technology (KyuTech, is doing research on clean energy devices such as solar cells, fuel cell and batteries. The laboratory is headed by Dr. Tingli Ma who is shown in the picture on the right.

One of the current projects of their laboratory is on the fabrication of eco-friendly perovskite cells which avoid the usage of organohalide lead materials. They are also researching on better hole transport materials that would increase the performance of perovskite solar cells while keeping production costs at the minimum.

Dr. Tingli Ma of Kyutech Wakamatsu campus http://www.life.kyutech.ac.jp/~tinglima/member.html

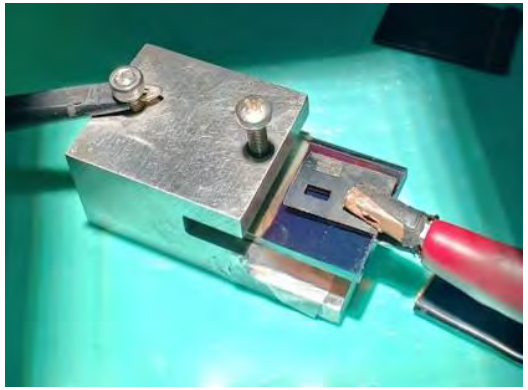
In collaboration with the Ma laboratory, Dr. Tingli Ma and her student, Yang Shuzhang are fabricating different types of Perovskite cell that will be part of BIRDS-4's mission to investigate the the performance of Perovskite in actual space environment. This will be the first on-orbit demonstration of Perovskite solar cells in space and would be a big step towards the research on the feasibility of Perovskite solar cells as source of energy for future satellite missions.

Doctorate student collaborator, Yang Shuzhang http://www.life.kyutech.ac.jp/~tinglima/member.html

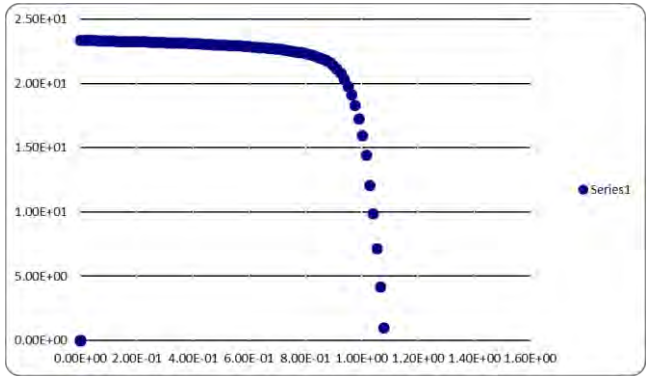
Perovskite solar cell fabrication and testing

Written By: Izrael Zenar Bautista

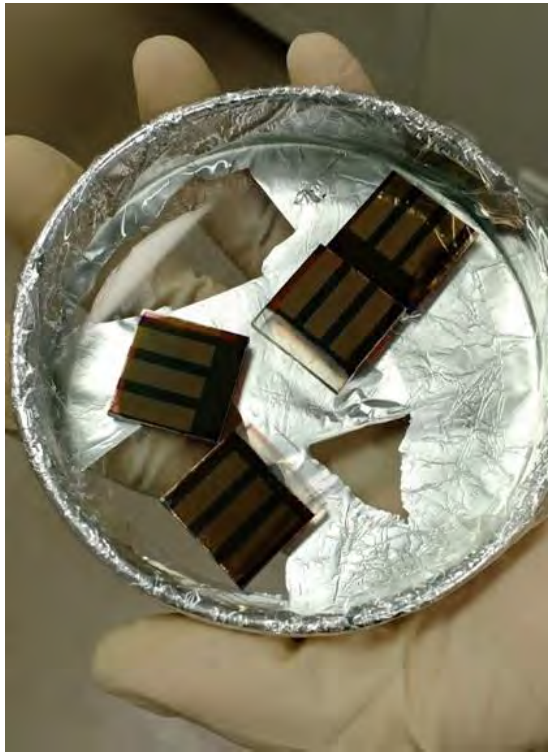
Shuzhang preparing for Perovskite cell fabrication inside glow box



Testing the Perovskite solar cells under solar simulator.



Voc (V)	Jsc (mA/cm2)	FF	Eff/%
1.08	23.37	0.77	19.29



Fabricated Perovskite solar cells. The manufacturing cost of Perovskite is many times cheaper than Triple junction solar cells.

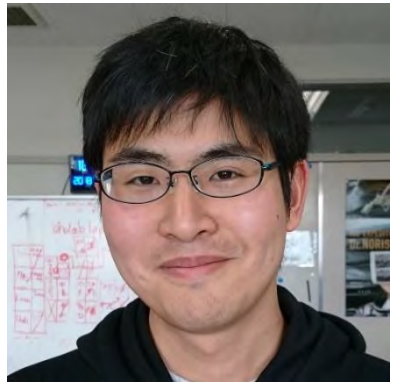
I-V curve characteristics of Perovskite solar cell fabricated in Ma laboratory. The efficiency is as high as 19%!

Improvement of Ground Station Antenna System

Daisuke Nakayama

BIRDS-4, Amateur Radio License Team

March 6, 2019



New GS Yagi antenna & rotator

Written By: Daisuke Nakayama

A new Yagi antennaarrived and we preceded to assemble it. The new Yagi antenna has more gain than before, in total, 22dBi. Old one's gain was 18dBi, so we got more strength of signal, 4dB (2.5times).

Assembly was very hard because it's necessary to push into main pole strongly and it had too many elements. 21 elements & cross & 2 stacks = 84 elements.

Cross Yagi antenna (21 elements) to use two in parallel

New BIRDS rotator - left for azimuth, right for elevation

New Yagi antenna is heavier. Furthermore, it has more gain but the beam width is narrow. That means we need to point the heavy antenna to satellite more accurately. So we decided to buy new strong rotator.

The new rotator can be run using the old tracking software but we can improve the accuracy making a new software. Another satellite project of KyuTech has a tailor-made software for tracking so we plan to modify this for BIRDS.

New BIRDS GS Yagi antenna on rooftop

Rotator calibration

Written By: Daisuke Nakayama

After installing the antenna on the rooftop, we calibrated the rotator since it has the narrower beam and we need more accuracy.

We carried two handheld radios and a dipole antenna to Mt. Sarakura. It is 6 km far from KyuTech's southwest and its elevation above sea level is 622m.

How to calibration is performed:

1. Calculate true angle at Mt. Sarakura
   (Elevation and Azimuth)
2. Send signal from the peak
3. Find the angle to receive it strongest
4. Calibrate the rotator controller

Before going to Mt. Sarakura, I made an antenna stand for the calibration.

Hand held radio and dipole antenna with stand originally used as tripod for camera. I made parts for fixing the antenna with a 3D printer.

On the Mt. Sarakura, Temperature was only 3°C. We felt very cold. I didn't want to put my hand out of my pocket to push the radio button.

It was too cold so we ate Zenzai (hot sweets) on the mountain cafeteria.

I hope we will improve the satellite communications through these activities.

Delicious Zenzai with some green tea

Mark's Birthday

by Yuma Nozaki

February 25, 2019

Mark’s Birthday

Written By: Yuma Nozaki

- February 8th is Mark’s Birthday and BIRD-4 members celebrated with a joy, of course! We made a secret plan to surprise him. A lot of people, not only BIRDS-4 members also BIRDS-3 and other project members participated this secret plan for him. When he got off the elevator, we said surprise with the cake. He was very surprised. Our secret plan has succeeded!
- I heard he likes strawberry before his birthday, so I bought a cake with many strawberries on top. A figure of the cake is on the right hand of this paragraph. It was very sweet and tasty! He was very happy to celebrate his birthday with us and this delicious cake. I think he made great memories.

A birthday cake for Mark

Mark’s Birthday

He was very happy!

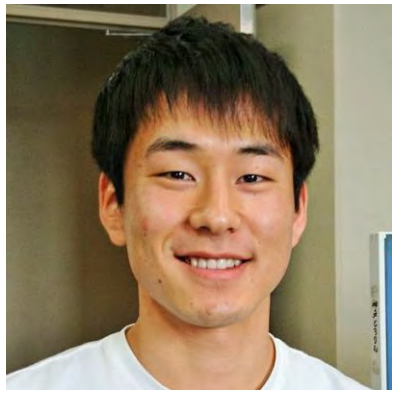
A group photo for his birthday.

My Bachelor Thesis Defense

by Tomoaki MURASE

BIRDS-4

March 7, 2019



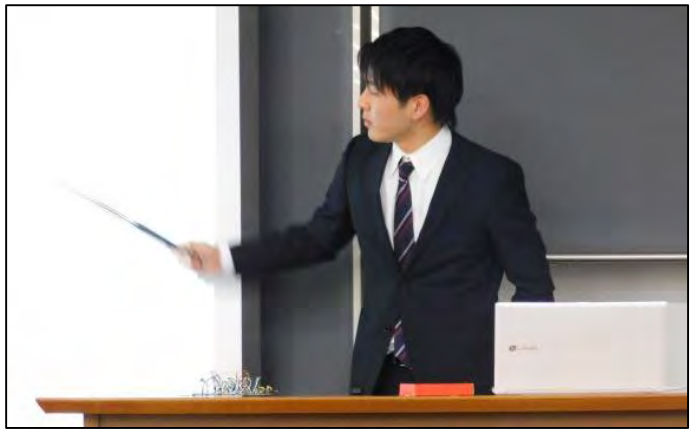
My Thesis Defense

Written By: Tomoaki MURASE

I had my thesis defense on February 21, 2019. Before than that, I had submitted its hardcopy and prepared its presentation. Everything went smoothly. My thesis was about radiation test for COTS components. I have been working on it from last November. It was hard for me that making the circuit and doing…

From the classroom during my defense

… the experiments. I managed finishing the experiment and writing the paper. After writing the thesis, I prepared my presentation for my research defense. I have finished my presentation and practiced for the coming defense. And I also got some advice from Masui-Sensei and Kim-Sensei and Cho-sensei at the practice. I edited my thesis from them again.



When I was presenting my thesis

I have gone to see the master research defense before my presentation. I was worried about my presentation after seeing the master defense because there were a lot of professors in there and they ask some complicated problems of student.

But when I made a defense, there were a few professors. More than half the people belong the Cho lab. So I could make a presentation relaxingly. And I could do it fluently with confidence. My defense finished without incident.

I will do same research when I go to graduate school. So I should practice more. And I hope I will be able to answer some complicated problems from professor.

31. BIRDS-4: Self-intro by Mendoza, Anibal, of Paraguay

Anibal Mendoza (ENG)

Paraguayan

Supervisor: Prof. Dr. Mengu Cho

BIRDS-4
JOINT GLOBAL MULTI-NATION BIRDS SATELLITE PROJECT

PERSONAL

Birthday: *December 25th*

Your motivation for BIRDS-4. Why are you a member?

I'm member of the Paraguayan Space Agency, and from the beginning we had the ambition to make our 1st satellite as a country. In addition to that task, it is an honor for me to be selected and take the responsibility to be part of this team and contribute to the developing of the CubeSat.

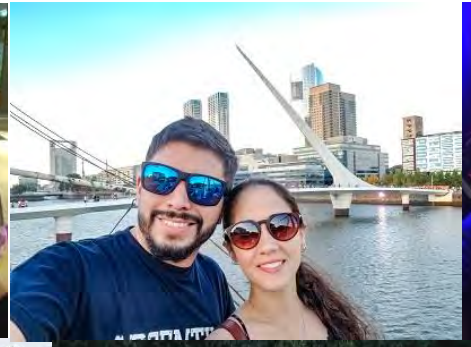
Hobbies

Being with loved ones, do exercise, cycling, jogging, play videogames, go to trackday, karting.

About Home

- What is your favorite food? *All kind of pastas*
- Where is your recommended place for visitors?

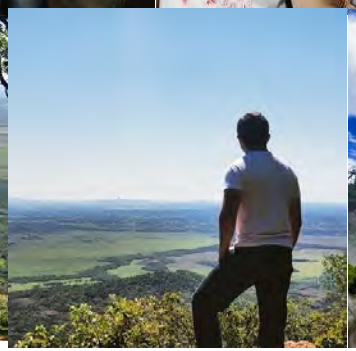
Costanera of Asunción and Encarnación, the hills from Guairá department, Monday falls.










Academic/Professional Background

DEGREES TAKEN

- *Aeronautical Engineer*

ACADEMIC INTERESTS

- *Aviation, structures, electronics, space, engineering.*

NUMBER OF PUBLICATIONS : *0*
NUMBER OF ENGINEERING PROJECTS INVOLVED : *1*

WORK HISTORY :

Aeronautical Engineering Assistant in the TAGUATO I project.
Planning chief. (Air Nostrum Technic America)
Director of industrial, commercial and competitiveness development in the aerospace sector. (Paraguayan Space Agency)

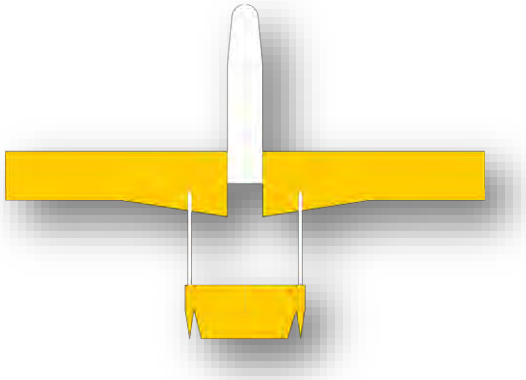








Engineering/Academic Project



Name of the Project: Taguato I
What is your role in the project: Aerodynamic Study of the UAV Taguato I

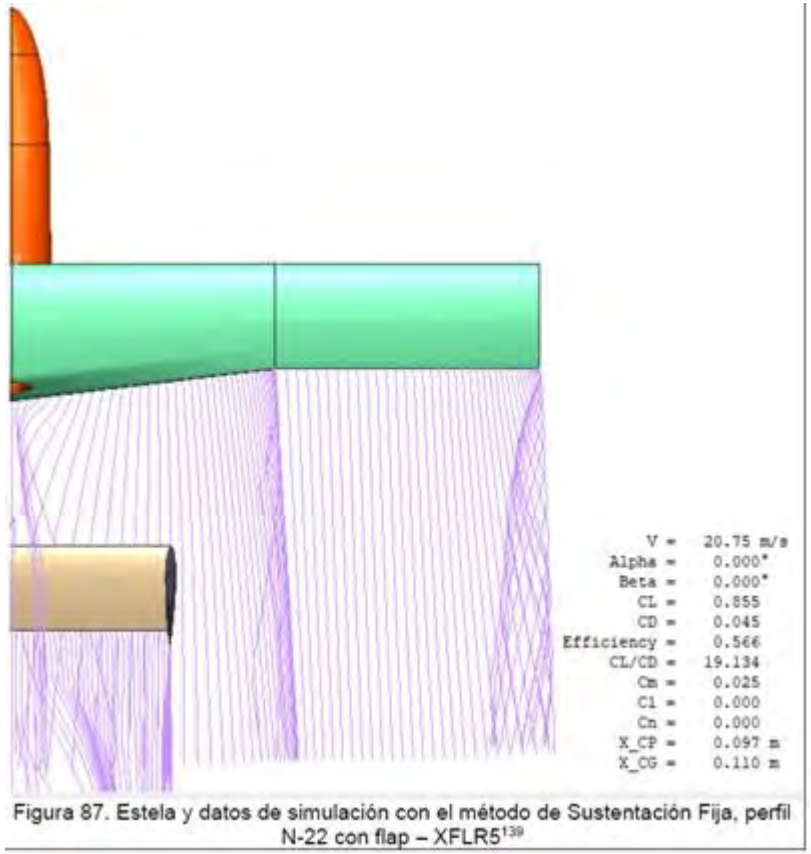
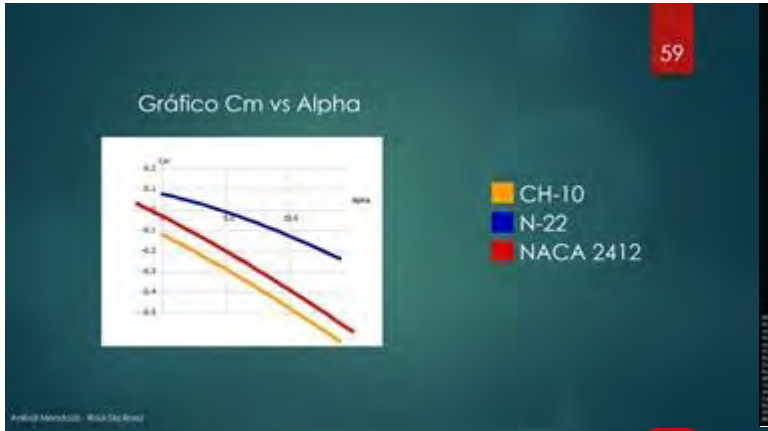
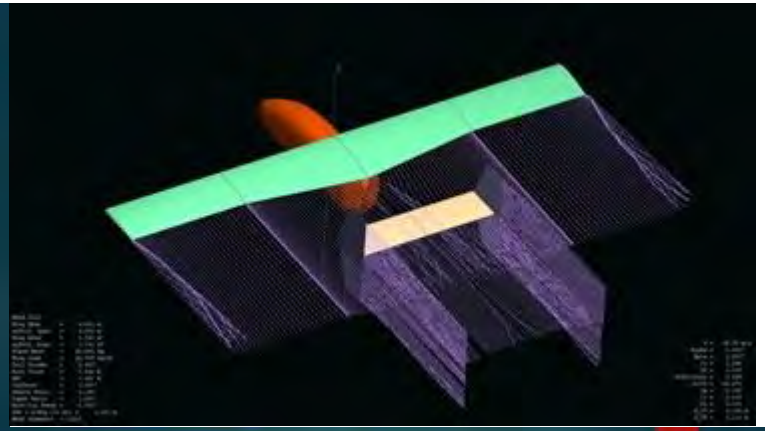
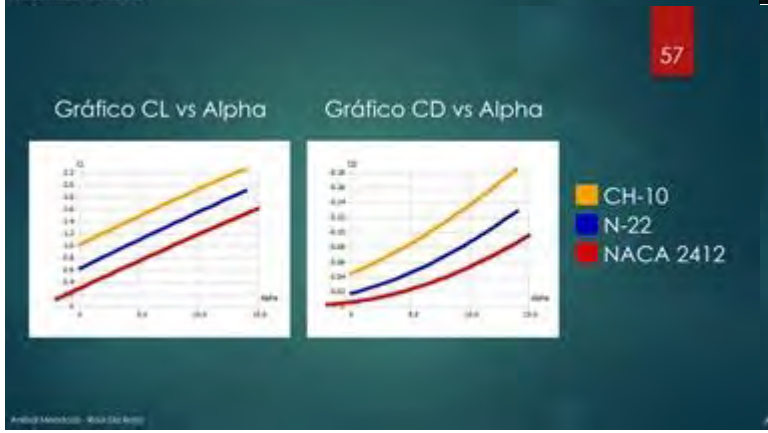
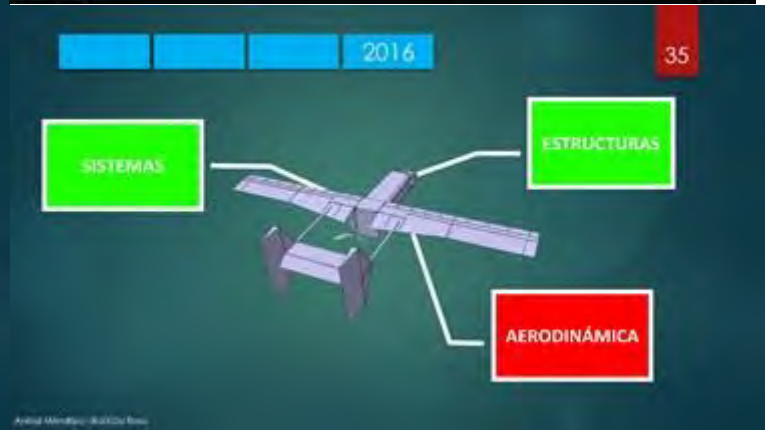


Figura 87. Estela y datos de simulación con el método de Sustentación Fija, perfil N-22 con flap – XFLR5[139]









Extra Information

PROGRAMMING LANGUAGE SKILLS

- *Basic knowledge of "C" and Java.*

SOFTWARE WORKED ON

- *CATIA V5, XFLR5, OpenFoam*

LANGUAGES MASTERED

- *English*
- *Spanish*

Food and Life in Fukuoka

by Hiroki Hisatsugu

March 7, 2019

Food and life in Fukuoka

Written By: Hiroki Hisatsugu

I went to an internship to a company in Hakata for the first two weeks of February. Hakata is the prefectural office of Fukuoka prefecture, the most urban place.

During the internship I had a “hotel life” in Hakata. Hakata is a very livable city with various shops. In this article, I would like to introduce Hakata's delicious food I’ve been eating in the last two weeks.

Let’s start with Hakata Tonkotsu Ramen: Ramen of Fukuoka original of pork bone soup. There is a peculiar smell, but the taste was excellent.

Tonkotsu-ramen

Ichiran-ramen

Ichiran (famous ramen shop)

There are many famous ramen shops in Hakata, especially the one I visited was the very famous Ichiran ramen restaurant’s original shop. The whole building was a dedicated for this ramen restaurant.

Food and life in Fukuoka

Written By: Hiroki Hisatsugu

Another one in Hakata I would like to introduce is the famous dish, “Motsu-nabe”.

It is very delicious, with excellent stamina, with a pot with boiled cow. I recommend eating at once.

The next famous destination is Nakasu Kawabata stall in Hakata.

In this place, stalls line up along the river at night. This stall oden and ramen are exquisite. There was also “Oden” special to Fukuoka. I was enjoying my meal while talking with the other customers.

Also I had a chance to visit Dazaifu, Fukuoka's one of the recommended sightseeing spot.

There is a shrine called Dazaifu Tenmangu where there is a god of academics, and every year, many students come to pray for success in their exams. I recommend the tasty ramen here as well.

Motsu-nabe

Dazaifu Tenmangu Shrine

Nakasu-Yatai (stall)

Oden

The Winning PBL Team Joins BIRDS-4 Project

Marloun P. Sejera

March 1, 2019

PBL Winning Team Joins BIRDS-4 Project

Written By: Marloun P. Sejera

Three teams of students from Project-Based Learning (PBL) class presented their proposed mission idea for BIRDS-4 on February 27, 2019 before the professors and other students. It was then announced that Team 3's proposal, Image Classification Unit, was chosen and will be included as one of the missions of BIRDS-4 Project. The day after the announcement, the winning team met with BIRDS-4 members to discuss plans on how their mission will integrate to the satellite.

PBL Team 3 presenting their mission during final review. From left: Tomoki Uemera (JP), Tmoithy Leong (FR), Yasir Abbas (SD), Hoda El-Megharbel (EG)

Timothy Leong (France), Yasir Abbas (Sudan), and Hoda El-Megharbel (Egypt) during the meeting at BIRDS Room

They were finally invited to be members of BIRDS-4 Project, and the three accepted! Uemura-san decided not to join since he was a member of BIRDS-2 Project. **With Yasir, Timothy, and Hoda joining the team, BIRDS-4 now has 14 members coming from different parts of the world – Japan, Paraguay, Philippines, Nepal, Turkey, Egypt, France and Sudan**. They are committed to participate with the activities and contribute for the success of the BIRDS-4 Project. The team warmly welcomes the three new members!

34. BIRDS-4: Self-intro by Abbas, Yasir, of Sudan

ABBAS, Yasir

Sudanese

Supervisor: Prof. Dr. Kenichi Asami

BIRDS-4
JOINT GLOBAL MULTI-NATION BIRDS SATELLITE PROJECT

PERSONAL

Birthday: *October 14*
Your motivation for BIRDS-4. Why are you a member?
I have always wanted to participate in a practical satellite project, this passion came true when my team was selected to join BIRDS4 after a secondary mission competition.

Hobbies

Traveling, Inline skating, Amateur Radio, Astronomy, Water Sports

About Home

- What is your favorite food? *Spicy food + grilled meat*
- Where is your recommended place for visitors?

Northern State heritage sites, Portsudan City in winter, Dinder National Park






Academic/Professional Background

DEGREES TAKEN

- *Electrical & Electronic Engineering (BSc.)*
- *Aerospace Engineer (MSc.)*

ACADEMIC INTERESTS

- *Telecommunication, Hardware programming, Satellite system engineering, Astrophysics, Project management*

WORK HISTORY :

- University of Khartoum
- Nile Center for Technology Research
- Ceres Space Technology Center
- Sudanese National Committee for Space

NUMBER OF PUBLICATIONS: 3

NUMBER OF ENGINEERING PROJECTS INVOLVED: 4

Satellite Project

Name of the Project:
KN-Sat project
The first Sudanese CubeSat project in University of Khartoum

The main role in the project:
Research Engineer

LANGUAGES

- ❑ *Arabic (Native)*
- ❑ *English (Proficient)*
- ❑ *Turkish (Basic)*
- ❑ *Japanese (Learning)*

35. BIRDS-4: Self-intro by El Megharbel, Hoda, of Egypt

ELMegharbel, Hoda

Egyptian

BIRDS-4
JOINT GLOBAL MULTI-NATION BIRDS SATELLITE PROJECT

Supervisor: Prof. Dr. Mengu Cho

Personal

- **Birthday:** July 24
- **Your motivation for BIRDS-4. Why are you a member:**
  - During project based learning course in KyuTech, as a team of four, we developed a preliminary design of a secondary mission board for BIRDS-4. Among three different missions our mission was selected to be integrated with the project and our team members had the chance to join this exceptional, educational experience.
- **Hobbies:**

Reading, Cooking, Traveling, shopping and playing sports

- **About home**
  - **What is your favorite food?** Deserts and Sweets
  - **Where is your recommended place for visitors?**

    Luxor and Aswan, Dahab, Marsa Alam (Egyptian Maldives), Siwa Oasis, Saint Catherine's Monastery

Academic Background

- **DEGREES TAKEN**
- Bachelor Degree in Electronics and Communications Engineering

- **ACADEMIC INTERESTS**
- Space engineering, Embedded Systems, Artificial Intelligence

- ACADEMIC WORK
  - **Misr International University, Cairo, Egypt**
    - Teaching Assistant, ECE Department

Engineering Projects

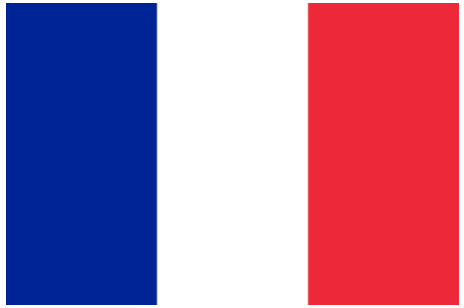
- Design, Implementation and Testing of Electrical Power Subsystem of Egyptian Universities Cube-Satellite (EUS1) (2016-2017)
- **Achievements:**
  - Nominated by the National Authority for Remote Sensing and Space Sciences as the Best Design for Electrical Power Subsystem for Egyptian Universities Satellite (EUS1-2017)
  - Joined The Egyptian Engineering Day (EED2017) among the finalists of Made In Egypt (MIE12)

Other Information

- **Technical Skills:**
  - **Applications**: MATLAB, Simulink, OrCAD Capture CIS, Proteus, LabVIEW tools, Logic Works, Packet Tracer, Multisim, Pyxis Mentor Graphics, Arduino IDE, Altium Designer, Raspberry-pi
  - **Programming language**: C/C++, VHDL, Python
  - **Languages:** Arabic, English, German

36. BIRDS-4: Self-intro by Leong, Timothy, of France

LEONG Timothy

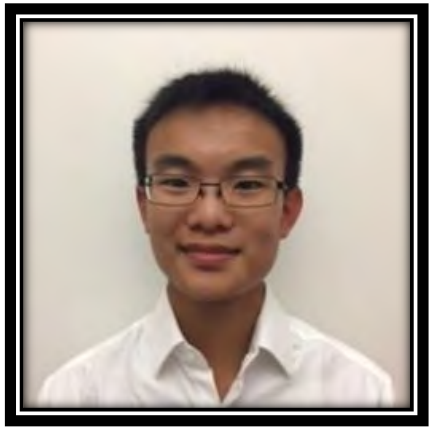


French

BIRDS-4
JOINT GLOBAL MULTI-NATION BIRDS SATELLITE PROJECT

Supervisor:

Prof. Dr. Koju HIRAKI



Personal

- Birthday: March 25th
- *Your motivation for BIRDS-4. Why are you a member:*

Through the SEIC course and the PBL class, me and my team member were selected to integrate BIRDS-4 and implement our mission design in their CubeSat. I am really glad to have been selected and it is an honor to be able to contribute to the satellite project.

- *Hobbies:*

Listening to Music, Traveling, Learning about foreign culture, playing video games, watching anime

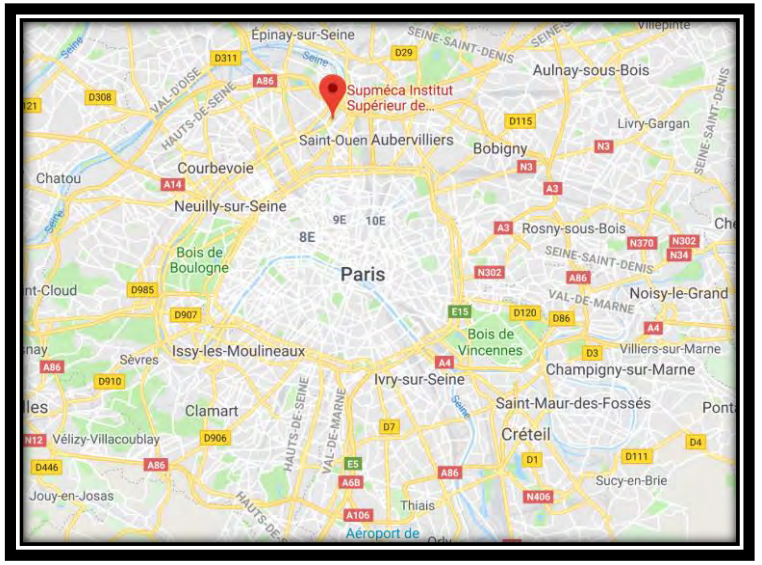
- *About home*
  - *What is your favorite food? Steak and fries*
  - *Where is your recommended place for visitors?*

  Paris and its monuments, Châteaux of the Loire Valley, Mediterranean coast

Academic background

- DEGREES TAKEN
  - Mechanical Engineering
- ACADEMIC INTERESTS
  - Aviation, space, mechatronics, engineering

- Academic history
  - 2018-2020: Kyushu Institute of Technology, Kitakyushu, Japan
  - 2016-2020: Supmeca, Institut supérieur de Mécanique de Paris
  - 2014-2016: Lycée Fénelon, preparatory class for the « Grandes Ecoles »



Previous work

- Worked on the design of an anemometer sensor holder for a solar updraft tower at the University of Arizona in Tucson

Knowledge areas

Field of knowledge:

- Mechanical design
- Mechatronics
- Fluid dynamics
- Industrial design
- Material design

Software knowledge:

- Catia v5 – v6
- Solidworks
- ANSYS Fluent
- Matlab
- Programming Languages: C, Python, basic knowledge of assembly language

Language Learned:

- French
- English
- Japanese
- German

End of this **BIRDS Project Newsletter**

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Issue Number Thirty-Eight

This newsletter is archived at the BIRDS Project website:
http://birds1.birds-project.com/newsletter.html

When a new issue is entered in to the archive, an email message is sent out over a mailing list maintained by the Editor (G. Maeda, Kyutech). If you wish to be on this mailing list, or know persons who might be interested in getting notification of issue releases, please let me know.

This newsletter is issued once per month. The main purpose of it is to keep BIRDS stakeholders (the owners of the satellites) informed of project developments.