



According to Bryce Space & Technology Co., among academic operators, Kyutech is No. 1 in number of 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.

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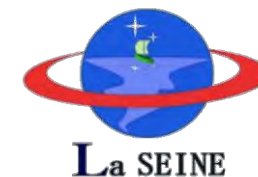
BIRDS Project Newsletter

Issue No. 52
(21 May 2020)

Edited by:

G. Maeda

Laboratory of Spacecraft Environment
Interaction Engineering (LaSEINE),
Kyushu Institute of Technology (Kyutech)
Kitakyushu, Japan



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.

Table of Sections

1. Kyutech is still Number One (academic operator of small satellites)
2. LaSEINE Laboratory Kick Off for the new 2020 academic year
3. Small satellite industry seeks stimulus as pandemic hits commercial investment
4. OneWeb files for bankruptcy
5. Space firms innovate solutions for the coronavirus pandemic
6. Kyutech introduces new course on advanced space robotics
7. How to study in Japan on a MEXT Japan government scholarship
8. Scholarships are also offered by JICA for study in Japan
9. Congratulations to Guatemala for its first satellite in space!
10. ISU offers this summer an online course; applications due before 31 May
11. New addition to SEIC YouTube Channel: Easy to make sweet-chilli shrimp
12. New addition to SEIC YouTube Channel: Home-made French Toast
13. JAXA video: Japanese space food
14. Report from Mongolia
15. Report from Nepal
16. Report from Honduras
17. Report from Uganda

Continued on the next page

From Zimbabwe

The Guest Box



#visitzimbabwe

Source

<https://www.zimbabwetourism.net/listing/victoria-falls/>

**Victoria Falls:
One of the World's Seven Wonders**

See explanation on the next page.

Table of Sections (cont'd from the previous page)

18. Olayinka's World – Column #16 (report from Nigeria)
19. Space4Youth Competition 2020
20. BIRDS-4: Ground station software decoder
21. BIRDS-4: How to live in quarantine here at Kyutech
22. BIRDS-4: Effectiveness of video-conferencing during the pandemic
23. BIRDS-4: My travel back to Nepal (Hari)
24. BIRDS-4: Remote classes
25. BIRDS-4: NASA space apps, COVID-19 challenge
26. Report from Paraguay
27. Report from Zimbabwe
28. Column #5 from Malaysia
29. Report from the Philippines
30. GST (Gnd Station Report) report from Malaysia
31. Introducing Dr. J. A. Ofosu – new member of the staff of LaSEINE
32. BIRDS-3: ADCS (Attitude Determination and Control System) mission
33. BIRDS-3: Satellite operation report from Taiwan
34. BIRDS-3: Outreach during quarantine
35. BIRDS-3: Home cooking in Sri Lanka
36. Momentus to launch IRIS-A satellite of Taiwan
37. Futaba student CubeSat project concludes fund-raising phase

End of Table

Explanation of *The Guest Box*

Victoria Falls, known as the “**Smoke that thunders**” in the local Tonga language, is the largest single curtain of falling water in the world and 70% of the exquisite views are seen from the **Zimbabwe** rain forest. Victoria Falls stretches for 1,708 metres, reaching 108 metres in height.

The rain forest which has constant rain 24/7 from the never ending spray of the Falls, has unique ecosystem. It is a botanists dream and bird lovers’ paradise. There are species here that don’t occur anywhere else, and our recommendation is to look just a little beyond the pathway and the numerous viewpoints. One of the beauties is that the area has not become over commercialized.



From:

- Timothy
 - Victor
 - Ramson
- of BIRDS-5

JSPS Reminder

When you publish a paper on a topic related to BIRDS, please include this acknowledgement in the paper:

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



JSPS provides the airfare funds of BIRDS Int'l Workshops and for Ground Station Workshops.

It would help us a lot.

01. Kyutech is still Number One (academic operator of small satellites)

Number of Academic Smallsats by Institution

Academic and Non-Profit Smallsats



BRYCE SPACE & TECHNOLOGY

<https://brycetek.com/reports>

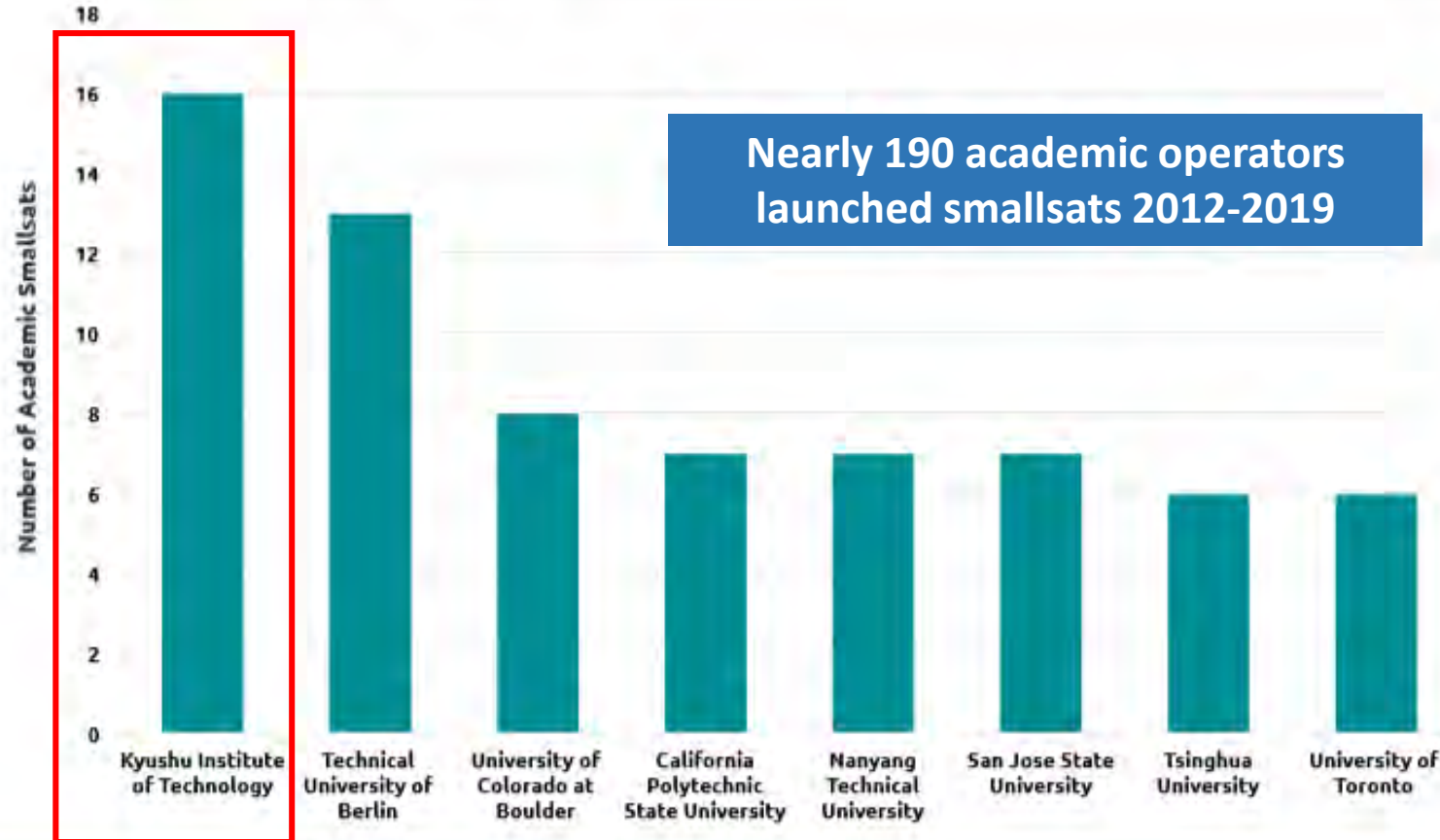
"Smallsats by the Numbers 2020"

Page 28

February, 2020

In a crowded race

Kyutech is still No. 1



Nearly 190 academic operators launched smallsats 2012-2019

02. LaSEINE Laboratory Kick Off for the new 2020 academic year

基本ルール (Basic rules)

- 研究室は「公共の場」 Laboratory is a public place
- 机におくものにご注意(内部も含む) Be careful about your desk (inside/outside)
 - 他人が見て困るようなモノは置くな Do not leave things that may offend others
 - ポルノ、宗教、麻薬、政治を研究室に持ち込まない No pornography, no religion, no drug, no politics
 - 自分のプライベートな空間(アパート、自分の頭の中)にもっておく Keep them inside your private space
- ハラスメントは許さない No harassment is tolerated
 - パワハラ、アカハラ、セクハラ、その他 Power, Academic, Sexual, etc.
 - 相手が不快感を覚えるような行動(=自分がされたら嫌なことは他人にしない) Acts of something which make the other uncomfortable (=do not do things you don't want to be done)
- 常に相手の気持ちに立って、他者を尊重するように Always respect others
 - モノ作りの基本(=人のためになるものを作る) Basics of engineering (= make things that benefit people)

二つの名前 (Two names)

- 革新的宇宙利用実証ラボラトリー
 - Laboratory of Lean Satellite Enterprises and In-Orbit Experiments (LaSEINE)
 - 2020年4月から使用 (Use this one)
- 昔の名前 (old name)
 - Laboratory of Plasma, Laser, Computational Electromagnetics (LaPlace)
 - 1996年に趙が九工大に来たときから使用
 - Used since I came to Kyutech in 1996

基本ルール (Basic rules)

- 禁煙 no smoking
- 漫画持ち込むな no manga
- 実験室で飲み食い厳禁 No food or drink in laboratory (experimental) space
- 実験室では靴を履く Wear shoes in laboratory (experimental) space
- 実験が終わったとき、家に帰るとき、実験スペースを片付ける Clean-up experimental space after you finish or when you go home
- 安全第一。先輩の指示が分からないときは、聞き直せ。英語でも同じ Safety is first. When you don't understand your partner's direction, ASK again.
- 研究で外部とメールのやりとりをするときは、
 - **@**kyutech.jp のアドレスを使う。Gmailや yahoo mailは緊急時のみ。
 - 指導教員にccをいれておく
 - Use your official e-mail **@**kyutech.jp for official matters. No Gmail or yahoo mail when you contact me for the first time.



On Monday, 27 April 2020, at 10:30 AM, **LaSEINE** (the combined labs of Professors Cho, Toyoda, and Iwata) conducted its “Lab Kick Off” to mark the start of the new academic year in Japan.

It was done via **Zoom**, with about 60 persons involved. Each new person (staff and students) did a self intro. This was followed by Prof Cho laying out all the basic rules of the Lab. Normally there is a barbeque in the evening but this has been postponed to when circumstances are more favorable for public gatherings.



秘書 (Secretary)

- 秘書さんや事務スタッフは研究室を動かす心臓 Secretaries and administrative staffs are the heart of the laboratory
- 白川さん、月成さん、河野さんから指示を受けたときは、最優先で対処する。先生からの指示よりも上だと思うこと When you are asked something by Shirakawa-san, Tsukinari-san, or Kawano-san, act immediately. It is your top priority.
- 物品購入について私にメールを出す時は、必ず月成さんと白川さんにCCすること When you send e-mail to me regarding procurement, always CC to Shirakawa-san and Tsukinari-san
- 研究室名簿を作るので、連絡先を白川さんに伝えておくこと Leave your contact information to Tsukinari-san
 - Mobile phone number, mail address, LINE, etc.

注意点

- コンピュータの管理 computer management
 - 学生にコンピュータは支給しない
 - コンピュータウイルスに注意 No laboratory computer issued to each student. Use your own computer. If you need a laboratory issued computer, ask Yamaguchi.
 - Don't get infected by computer virus
 - Install Anti-Virus software issued by the school
 - if you are infected, your computer will be taken for investigation by the school. The use of your computer in the school will be suspended until you bring a certificate that you clean-installed your computer. The cost of clean-install is on your own
 - Follow the network ethics
- 閉じた研究ノートを作る
 - ルーズリーフとか、メモ用紙とかを使うな
 - Make a bundled research note
 - No sheets of loose papers

5S

- 趙・豊田・岩田研究室では、安全・快適・効率的な研究環境を作るために5S活動を推進しています。 The goal of LaSEINE is to make contribution to the society through the research and the human resource development.
- 5S (整理、整頓、清掃、清潔、しつけ) Efficiency is important to provide the output to the society in a timely manner
- Efficiency is gained from Safe, Comfortable, Orderly and Clean working environment
- 実験室やオフィスを対象に常に改善を心がけ
- 学生の自律的な5S活動を期待します。
 - 企業に行ったらどうせやる。それなら今からやる
 - 5S activity by students themselves on office, laboratory space and common space (e.g. seminar room)

03. Small satellite industry seeks stimulus as pandemic hits commercial investment

SPACENEWS



The small satellite industry is asking for greater government investments to help suppliers weather the coronavirus crisis. Credit: Exolaunch

Small satellite industry seeks stimulus as pandemic hits commercial investment

by Sandra Erwin — April 22, 2020

The **SmallSat Alliance** is calling on the Pentagon and the intelligence community to add hundreds of millions of dollars to satellite programs.

WASHINGTON — A space industry group is calling on the Pentagon and Congress to increase investments in small satellite programs to shore up companies hit hard by the pandemic. The crisis is “making our companies particularly vulnerable to bankruptcy or foreign takeover,” the SmallSat Alliance said in a white paper April 21. “The COVID-19 crisis is creating new, profound market challenges,” the group said.

The **SmallSat Alliance** represents about 45 companies including satellite operators, manufacturers, component suppliers, launch providers, ground network operators and data analytics providers.

The group’s white paper calls on the Pentagon and the intelligence community to add hundreds of millions of dollars to satellite programs. The investments would be to develop “hybrid space architectures” that combine commercial smallsats with traditional government satellites, Steve Nixon, president of the SmallSat alliance, told SpaceNews. The Pentagon has been studying options to deploy hybrid architectures — as a way to make constellations less costly to build and more resilient to attacks — but has been slow to bring them to fruition. The SmallSat Alliance argues that the government should now step up those efforts **FOR THE REST SEE THE LINK BELOW**

<https://spacenews.com/small-satellite-industry-seeks-stimulus-as-pandemic-hits-commercial-investment/>

04. OneWeb files for bankruptcy



OneWeb satellite (from OneWeb)

**Sadly,
OneWeb
went belly
up**

OneWeb And Sky & Space Failure – The Effect On Satellite Broadband Connectivity In Africa

By Space in Africa - April 14, 2020

“OneWeb and Sky & Space Global are some of the companies that considered the use of nanosatellites to provide global connectivity. In March, OneWeb filed for bankruptcy, and earlier this month, Sky & Space Global entered voluntary administration, both largely due to their inability to raise further investment. Both companies wanted to power global communications by a constellation of low-Earth-orbit satellites while providing connectivity to people and businesses everywhere around the world. In achieving this, OneWeb raised about USD 3.4 billion while Sky & Space raised about USD 60 million (early investment from angel investors, VCs, and IPO) out of the USD 160 million needed for their constellation. It was a great promise for improving connectivity in Africa, which explains why Africa was one of their leading markets. “

SEE THE LINK BELOW FOR THE REST

<https://africanews.space/oneweb-and-sky-space-failure-the-effect-on-satellite-broadband-connectivity-in-africa/>

05. Space firms innovate solutions for the coronavirus pandemic

APRIL 30, 2020

SPACEFLIGHT NOW

HOME NEWS ARCHIVE LAUNCH SCHEDULE MISSION REPORTS SUBSCRIBE MEMBERS

BREAKING NEWS >

[April 28, 2020] SpaceX to debut satellite-dimming sunshade on Starlink launch next

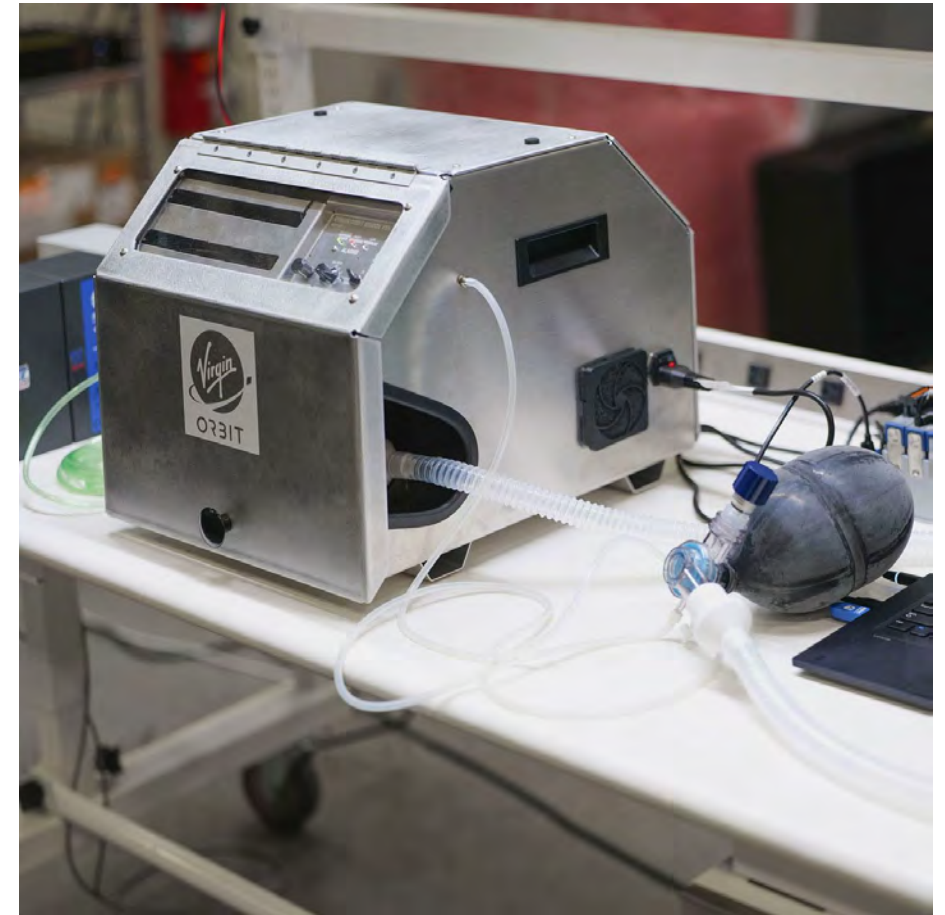
Space companies rally to supply medical equipment amid pandemic

© April 7, 2020  Stephen Clark

While production of rockets and satellites continues across much of the space industry amid the coronavirus pandemic, engineers at several space companies — including SpaceX, Virgin Orbit and Blue Origin — have started working on medical devices and protective equipment in response to shortages in hospitals across the United States.

Virgin Orbit has designed a simplified ventilator at its rocket factory in Long Beach, California, while SpaceX has agreed to supply valves for ventilators produced by the medical supply company Medtronic. The launch firm said it contacted California Gov. Gavin Newsom, whose office connected Virgin Orbit with the California Emergency Medical Services Authority **FOR THE REST SEE THE LINK BELOW**

<https://spaceflightnow.com/2020/04/07/space-companies-rally-to-supply-medical-equipment-amid-pandemic/>



A “bridge ventilator” designed by Virgin Orbit.
Credit: Virgin Orbit

06. Kyutech introduces new course on advanced space robotics

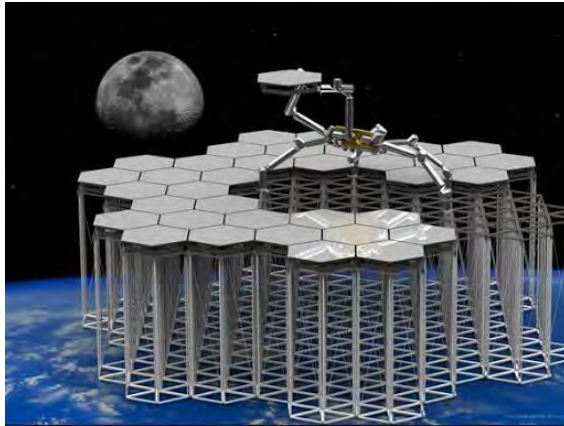
Course Name (科目名)	Advanced Space Robotics		
Instructor Name (担当教員名)	Kenji Nagaoka		
Course intended for (対象学年)	1st or 2nd year student (SEIC students)		
Credit Category (単位区分)	Elective course	Credits (単位数)	2
Course Description (授業の概要)	Currently, robotics technologies have been required for various space applications to support or replace human space activities. In particular, robotics exploration is necessary for deep space exploration. This course introduces fundamentals and applications of space robotics. Specifically, this course expects students of learning and better understanding of fundamental mechanics, control technique, and autonomous technology of space robotics.		
References/Recommended Reading (参考書)	[1] Y. Xu and T. Kanade, Space Robotics: Dynamics and Control, Kluwer Academic Publishers. [2] A. Elley, An Introduction to Space Robotics, Springer. [3] J. Y. Wong, Theory of Ground Vehicles, Wiley. [4] G. H. Heiken et al., Lunar Sourcebook: A User's Guide to the Moon, Cambridge University Press.		
Notes (備考)	This lecture is provided in English. It is desirable for students to have fundamentals of robotics and control engineering.		

Class topics are listed on the next page

Some examples of space robotics – now and in the future



<http://robotglobe.org/mda-to-extend-support-of-the-canadian-robotics-on-the-international-space-station/>



ROBOTIC TECHNOLOGY FOR IN-SPACE ASSEMBLY

Half-day Workshop at the IEEE International Conference on Robotics and Automation (ICRA) Montréal, Quebec, Canada Thursday, May 23, 2019

<http://hq.wvrtc.com/icra2019/index.shtml>

1. Introduction of Space Robotics
2. Kinematics and Dynamics of Space Manipulator
3. Control of Space Manipulator
4. Contact Dynamics of Space Manipulator
5. Object Capture by Space Manipulator
6. Vibration Suppression Control of Flexible Space Structure
7. Tele-Operation Technology and Autonomy
8. Locomotion Mechanism of Planetary Robot
9. Terramechanics for Planetary Robotics (1)
10. Terramechanics for Planetary Robotics 2)
11. Autonomous Technology for Planetary Robotics (1)
12. Autonomous Technology for Planetary Robotics (2)
13. Robotics for Minor Body Exploration
14. Drilling Technology on Extraterrestrial Body
15. Backup and Introduction of State-of-the-Art Topics

END OF THIS SECTION

07. How to study in Japan on a MEXT Japan government scholarship



<https://www.youtube.com/watch?v=pxFVn4YEImc>



If you are a young person outside of Japan and you are looking for ways to study in Japan with a MEXT scholarship, then this 9-min. video is for you. Also, consult your local Japan embassy for detailed local requirements.



08. Scholarships are also offered by JICA for study in Japan

Japan International Cooperation Agency



The following (02 May 2020) is from:

<http://en.ritsumei.ac.jp/admissions/jica-scholarships/>

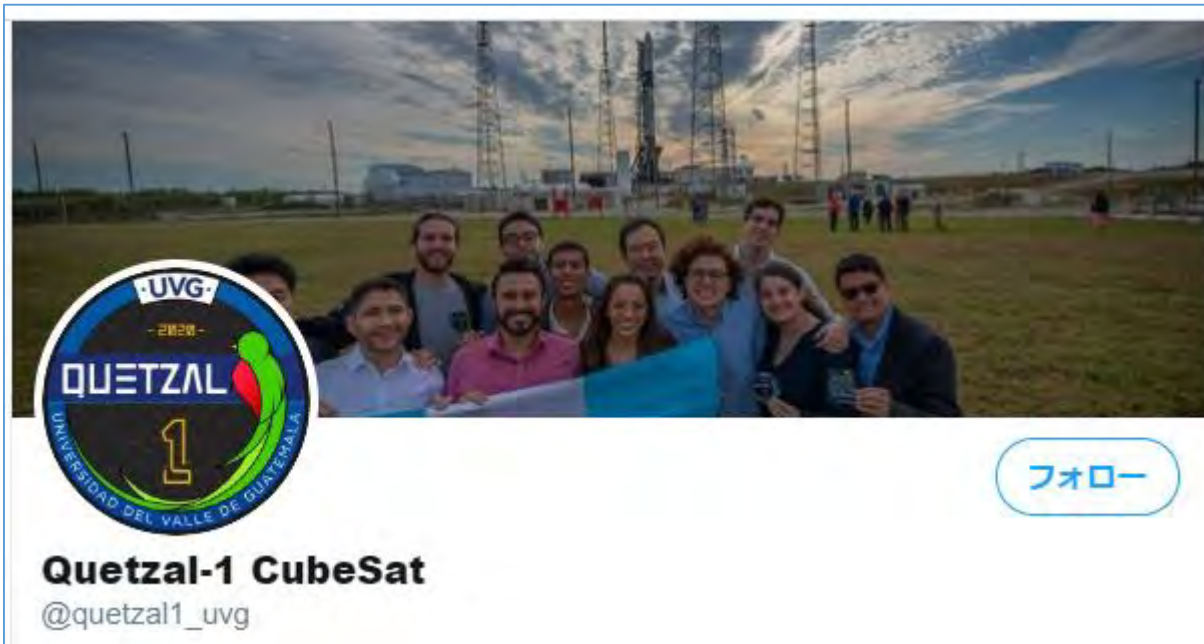
SDGs Global Leaders Course

JICA's SDGs Global Leaders Course is a program for government employees, university professors, etc... from the countries of ASEAN, Oceania, South, East, and Central Asia, South America and Sub-Saharan Africa. The goal of the program is to raise the potential leaders of the future, and to develop their capacity to assist their countries in meeting their Sustainable Development Goals by allowing participants to earn either a Master's or Doctoral degree at a high level Japanese university.

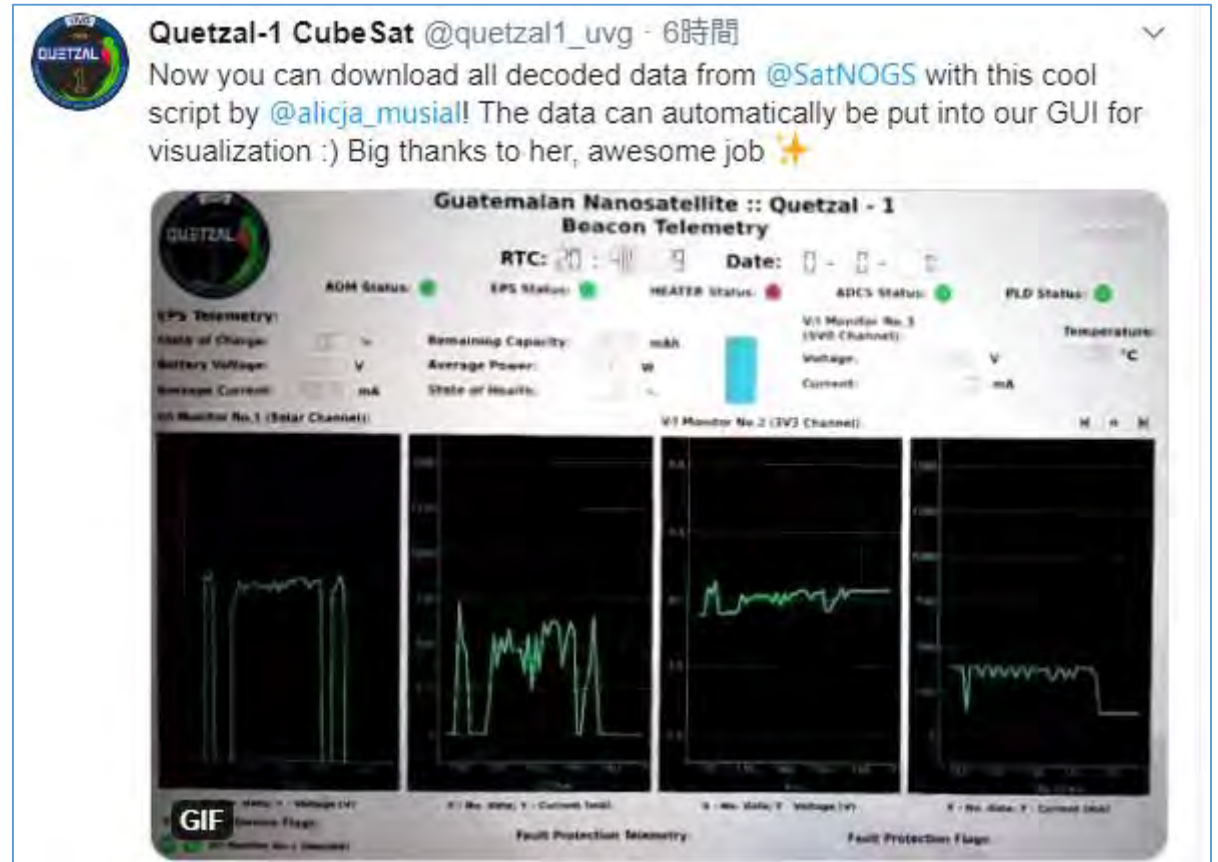
Information on this opportunity will be shared through the workplaces of eligible applicants, and applicants must apply through their workplace to JICA first before completing the university admissions procedures described below (the application deadline for this is usually late-September of the year prior to enrollment). **For further details on this opportunity, please inquire at your workplace and/or contact your local JICA branch office directly.** Information can also be found on JICA's webpage by navigating to the individual homepage for your country from the link below.

JICA Countries and Regions Homepage: <https://www.jica.go.jp/english/countries/index.html>

09. Congratulations to Guatemala for its first satellite in space!



Guatemala's first satellite (part of JAXA's KiboCUBE program) was successfully deployed by JAXA's deployment facility aboard the ISS on 29 April 2020. See the next page for JAXA's press release about this historic event.



The Twitter link: https://twitter.com/quetzal1_uvq

Press Release

Home > Press Release > Successful Deployment of First Guatemala Satellite, Selected as the Second Round of KiboCUBE Programme

Tweet Like 30

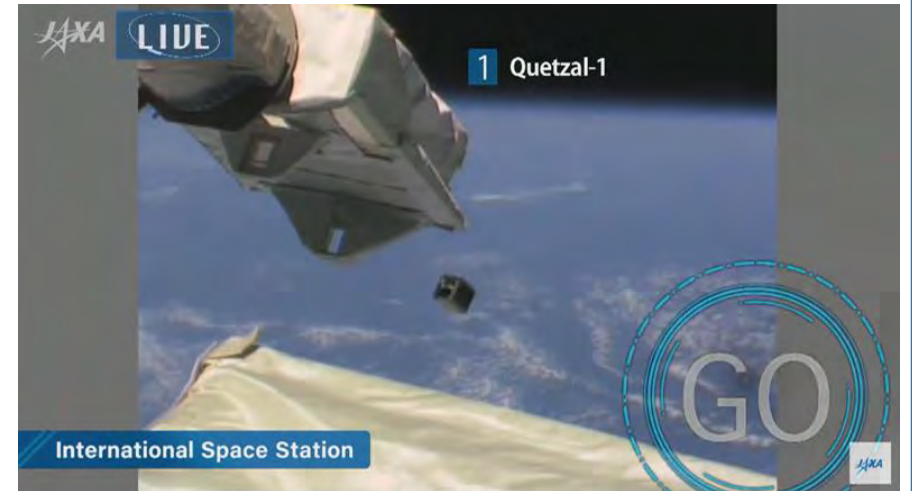
Successful Deployment of First Guatemala Satellite, Selected as the Second Round of KiboCUBE Programme

April 30, 2020 (JST)

National Research & Development Agency
Japan Aerospace Exploration Agency (JAXA)

On April 29th, 2020 (Japan time), the CubeSat developed by a team from the Universidad del Valle de Guatemala was successfully deployed from the Japanese Experiment Module “Kibo” of the International Space Station. This CubeSat, named “Quetzal-1” was selected as the winner of the Second Round of KiboCUBE programme. The live streaming of the deployment was broadcasted online, and many people in Guatemala watched the successful deployment of their first national satellite through live streaming.

Quetzal-1 was developed as Guatemala’s first satellite, and the Universidad del Valle de Guatemala will operate the CubeSat after its deployment from “Kibo.” The knowledges earned from the observation data of Quetzal-1 will be applied in Guatemala’s future remote sensing technology. **SEE THE LINK FOR THE REST**

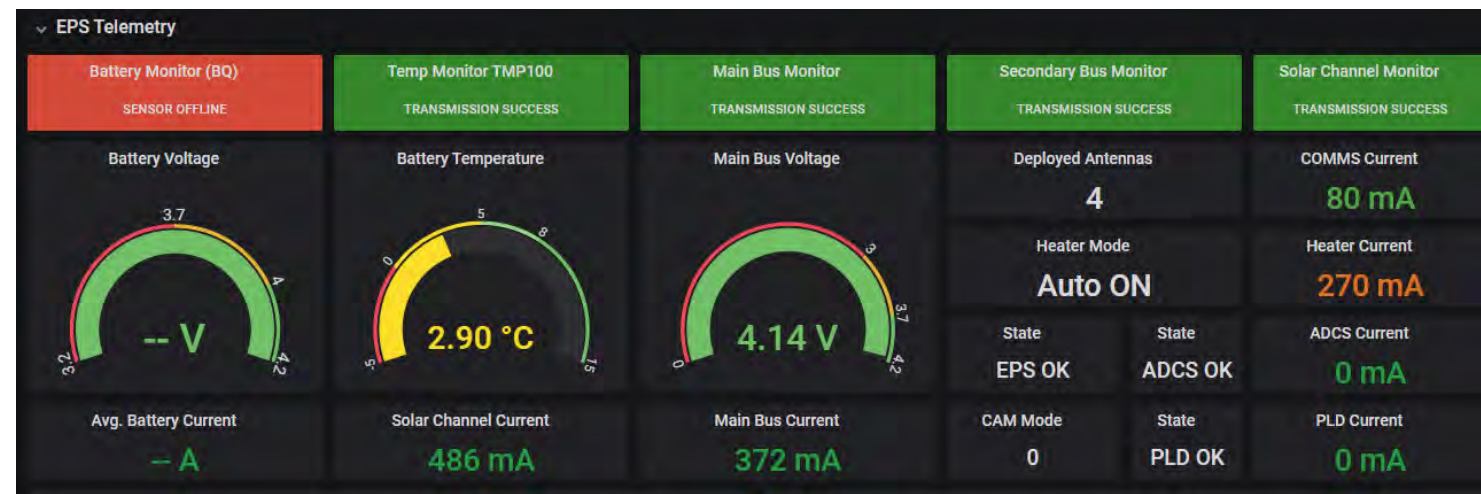
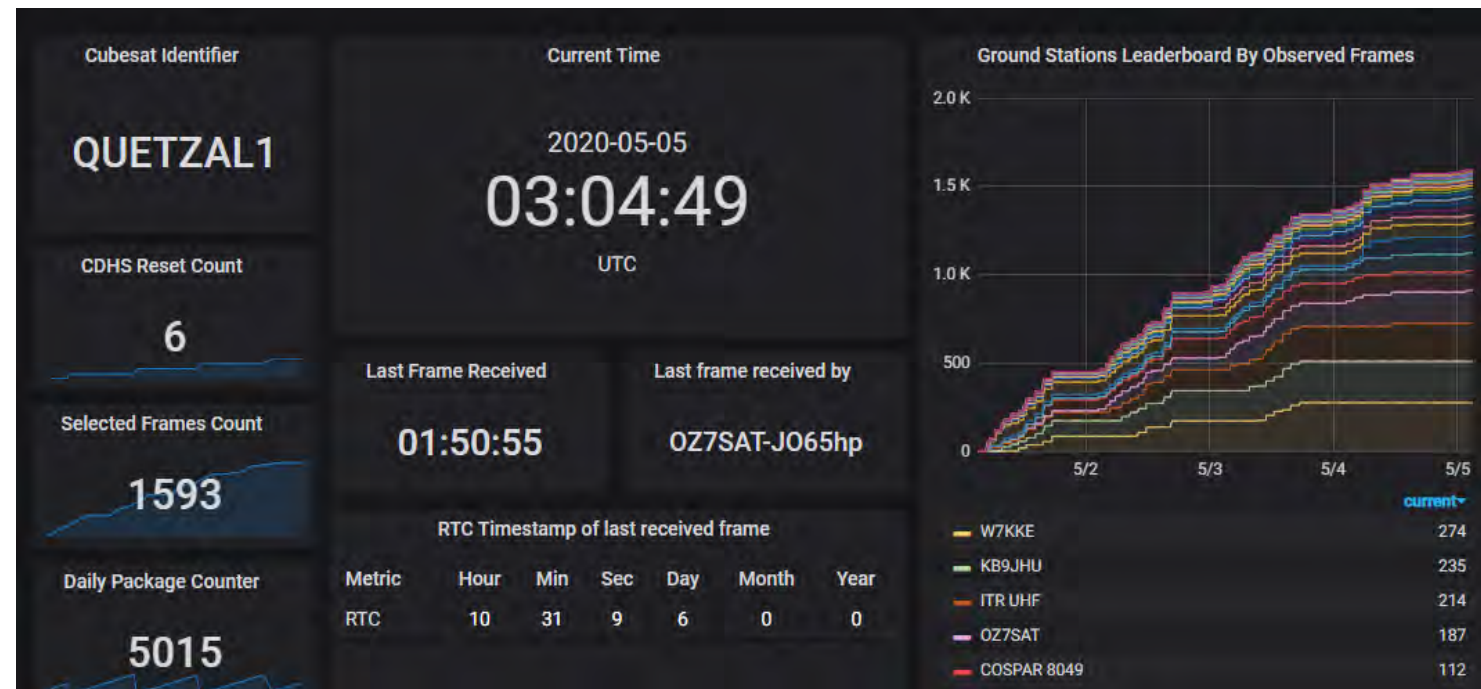


Deployed from the ISS

See the full press release by JAXA

https://global.jaxa.jp/press/2020/04/20200430-1_e.html

You can view its telemetry data via the link below



THE DASHBOARD: <https://dashboard.satnogs.org/d/js5kQceWz/quetzal-1-telemetry?orgId=1&refresh=1m>



10. ISU offers this summer an online course; applications due before 31 May



The screenshot shows the ISU website header with navigation links: PROGRAMS, RESEARCH, ADMISSIONS, NEWS, ALUMNI, ABOUT. Below the header is a large banner for the Interactive Space Program. The banner text reads: "INTERACTIVE SPACE PROGRAM" followed by "The ISU Interactive Space Program (ISP) is an online professional development experience that will prepare you for the challenges of working as international, intercultural and interdisciplinary teams across the distributed domains of Earth, orbit, Moon, Mars and interplanetary space." At the bottom of the banner is a button that says "Apply to the Interactive Space Program".

WHO IS THE ISP FOR?

ISU's online Interactive Space Program (ISP) is a 5-week full-time professional development opportunity designed for university graduates from any discipline and for professionals with any background wanting to pursue a career in the space sector.

ISP 2020 will run from **Monday 20 July through Friday 21 August 2020**.

It will be conducted in English and follow the international, interdisciplinary and intercultural learning methodology for which ISU is well known.

ISP ADMISSIONS REQUIREMENTS

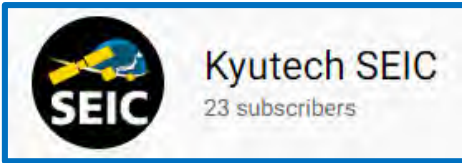
The deadline for applications is 31 May 2020. To allow for interactive learning based on small groups and individual mentoring, the number of places is limited, and applicants are encouraged to apply early.

The tuition fee is 7500 Euro and includes attendance to all sessions, lecture material, access to experts and to ISU's online Library services. Financial help is available through ISU for applicants from many countries and will be considered once the full application is received.



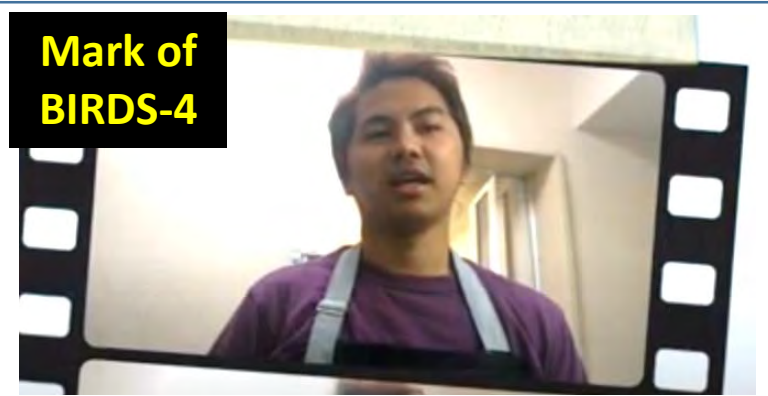
FOR COMPLETE INFORMATION: <https://www.isunet.edu/interactive-space-program/>

11. New addition to SEIC YouTube Channel: Easy to make sweet-chilli shrimp



New Video Addition:

SEIC YouTube Channel: https://www.youtube.com/channel/UC_XUgaOV30kyk59WYJeBBWg



Mark of BIRDS-4

This new cooking video was produced by **Mark** (BIRDS-4, Philippines) as a suggestion to SEIC students for cooking at home during times of home quarantine.



Sweet-Chilli Shrimp (uploaded 01 May 2020):

<https://www.youtube.com/watch?v=xGpGYYbCthg&feature=youtu.be>

[Length: 8.5 minutes]



12. New addition to SEIC YouTube Channel: Home-made French Toast

Also by Mark



<https://www.youtube.com/watch?v=lr6k0ieURrw&feature=youtu.be>



13. JAXA video: Japanese space food



<https://www.youtube.com/watch?v=DVHtH1-5u1A>



Review of recent space activities in Mongolia



by Tuguldur Ulambayar
10 May 2020



Mongolian Space Technology Association



Prof. Tsolmon

Prof. Ulam-Orgikh

“Nanosatellite – New Possibility” business meeting

2019-06-04

The Mongolian team has announced the launch of its next satellite project, which named Temuulel, on the 2nd anniversary of the launch of the MAZAALAI satellite.

Moreover, the results of the Mazaalai satellite project and further opportunities for satellite development, cooperation, and business proposals are also discussed on this meeting.



Logo of the “Temuulel Project”



Temuulel satellite development team





Mongolian Space Technology Association



Dr.Erdenebaatar



Dr.Amartuvshin



Dr.Turtogtokh



Dr.Erdenebaatar (Erka), Dr. Turtogtokh (Turo) Dr.Amartuvshin (they were all former Kyutech students) presented the Mazaalai satellite project, Space technology and Temuulel satellite project .



2019-10-04

The MOSTA was officially inaugurated and became more active. (Originally, MoSTA was established at Kyutech in 2017)

Head of the MoSTA organization
Dr. Erdenebaatar



Mongolian Space Technology Association



Gurragcha Jugderdemid (He is the Mongolian first astronaut who launched into space in 1981.)

Contact information:

<http://mosta.mn>

<https://www.facebook.com/Mongolian.Space.Technology/>

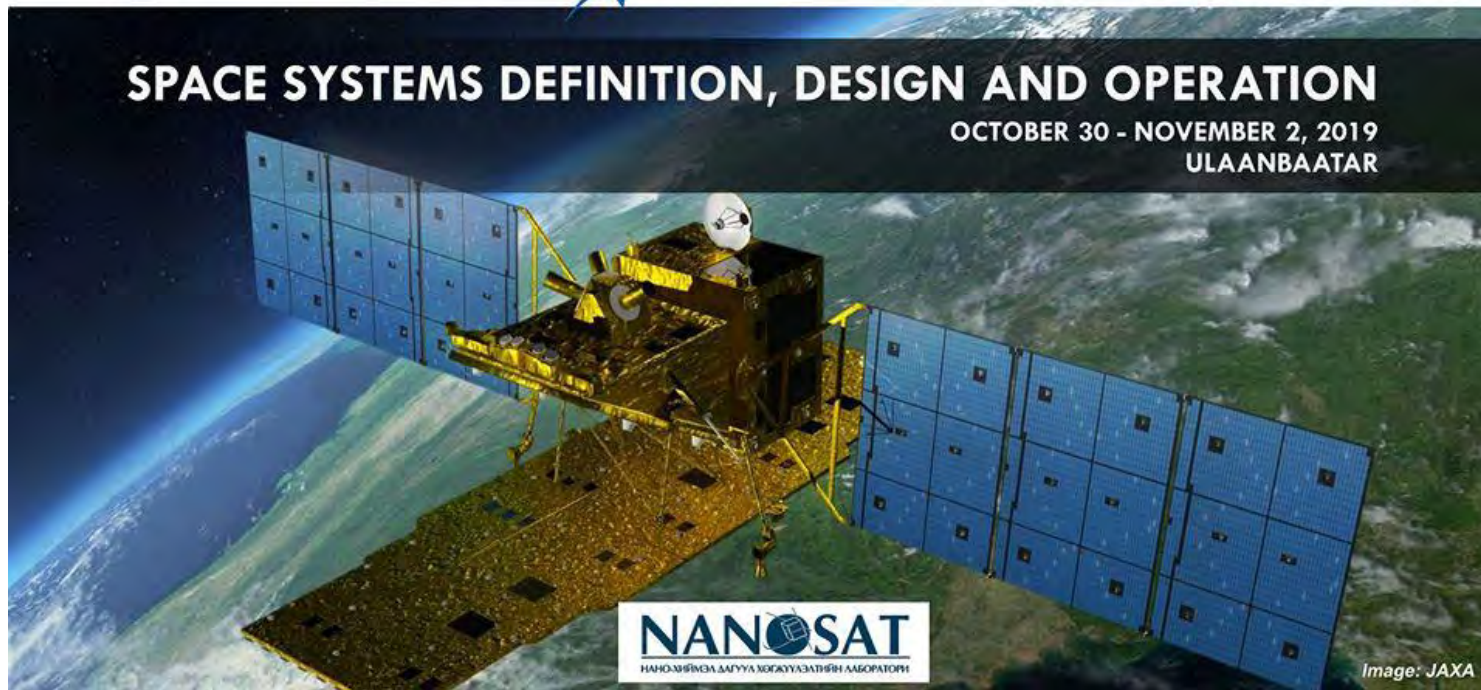
https://www.instagram.com/mongolian_space_tech/



Certified training with JAMMS



National University of Mongolia, "Japan Manned Space Systems Corporation" (JAMSS), and Kyushu Institute of Technology jointly organized the "SPACE SYSTEMS DEFINITION, DESIGN, OPERATION"



In this training, wide range of knowledge which related to space technology is provided. For example space technology's importance for our lives, how to define the system for the needs of people through satellite and satellite technology, how to develop satellite, how to do satellite tests, and how we use the downloaded satellites information from space for our daily life.



Certified training with JAMMS



SPACE SYSTEMS DEFINITION, DESIGN AND OPERATION

JAMSS initiative
Space Engineering Education
JAMSS & Kyutech
Education content for Mongolia

Lecturer

PhD. Kateryna Aheieva

October 30 - November 02
Ulaanbaatar, Mongolia

LIMITED SEATS,
LECTURES ON THE ENGLISH



SPACE SYSTEMS DEFINITION, DESIGN AND OPERATION

Lecture topics

1. How does space benefits to people:
 - 1.1. Fundamental benefits of space exploration;
 - 1.2. Advances in science and technology;
 - 1.3. Global technical workforce development;
 - 1.4. Countries and people needs.
2. How to convert people needs to the satellite missions:
 - 2.1. Satellite missions and their value to the world;
 - 2.2. Available technologies for the space exploration;
 - 2.3. Perspective technologies and their future in satellite development.
3. How to convert satellite missions to the actual satellite hardware:
 - 3.1. Requirements to the satellite;
 - 3.2. Satellite's limitations;
 - 3.3. Satellite development and requirements;
 - 3.4. Satellite testing and requirements;
 - 3.5. Satellite safety and launch.
4. How to operate satellite:
 - 4.1. How are satellites controlled;
 - 4.2. Ground station operation;
 - 4.3. Satellite signals; modulation technics;
 - 4.4. Satellite operation, data collection and data analysis.
5. How to sustain with the satellite mission:
 - 5.1. New country's infrastructure;
 - 5.2. Commercial technologies;
 - 5.3. Workforce development;
 - 5.4. Education.

October 30 - November 02
Ulaanbaatar, Mongolia

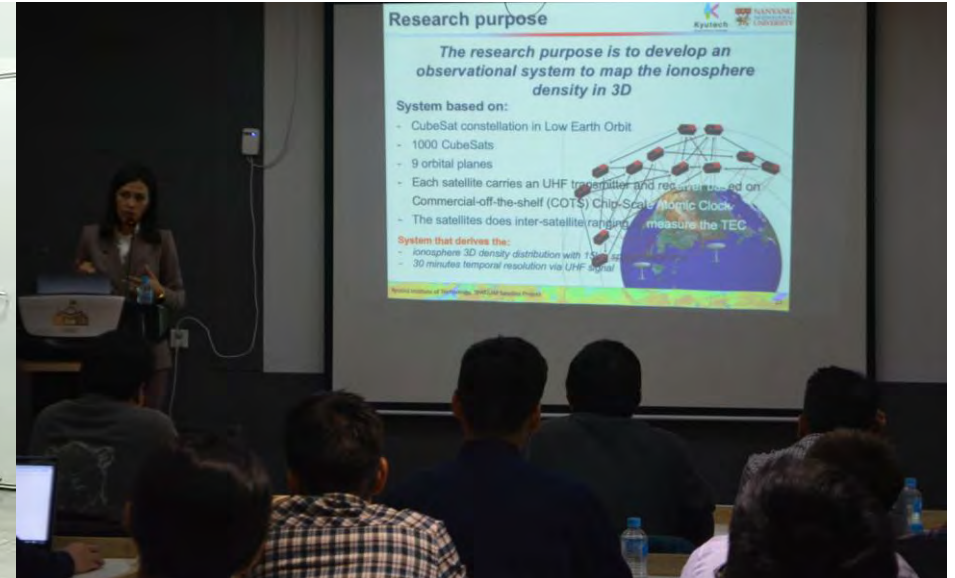
LIMITED SEATS,
LECTURES ON THE ENGLISH



Certified training with JAMMS

<Day 1: OCT 30th>

1. How does space benefits to people
2. How to convert people needs to the satellite missions





Certified training with JAMMS

<Day 2: OCT 31st>

3. How to convert satellite missions to the actual satellite hardware (3.1-3.3)

Training participants:
35 qualified persons from

- ◆ NUM's students who are working on "Temuulel" satellite project
- ◆ Institute of Astronomy and Geophysics
- ◆ Institute of Geography and Geoecology
- ◆ Mongolian University of Science and Technology
- ◆ Mongolian National Defense University
- ◆ Mongolian Meteorological Agency
- ◆ "Mongol Koosen" Technological College
- ◆ "New Mongol" Technology and Engineering College
- ◆ National Emergency Management Agency
- ◆ Information and Research Institute of Meteorology, Hydrology, and Environment





<Day 4: NOV 2nd>

4. How to operate satellite

5. How to sustain with the satellite mission



Dr. Kateryna Ahieva (**Axelspace Corporation** and former Kyutech student) handed the certificate for successful graduates





Temuulel – Preliminary Design Review

2019-DEC-24

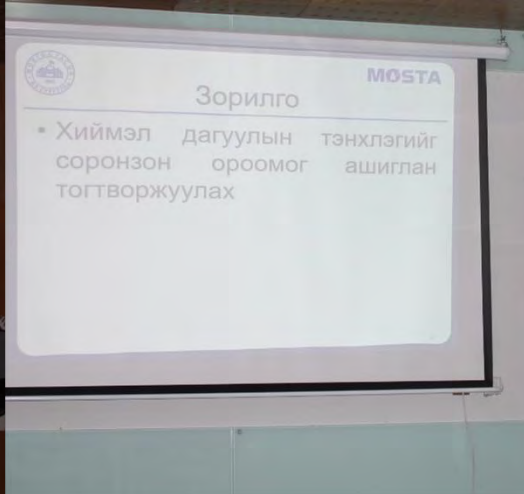
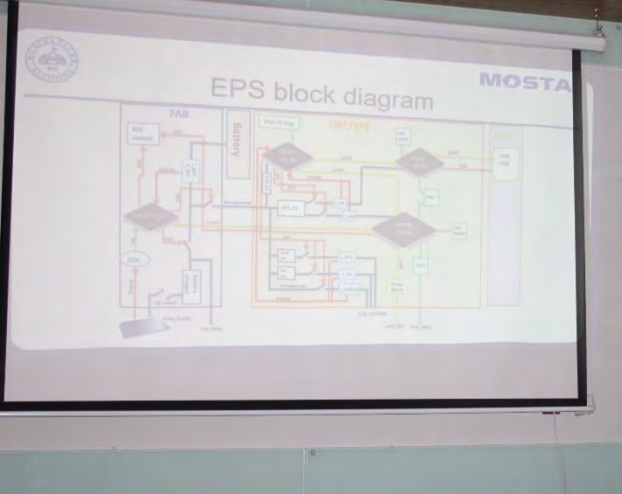




Temuulel – Preliminary Design Review

2019-12-24

After the PDR



EPS



"CanSat" national competition

2020-01-15

An orientation training was organized for the 5th CANSAT national competition, which aims to provide space technology knowledge and education through a real project under the motto "Let's challenge ourselves". In addition to 12 teams from 9 domestic universities, 15 teams from 3 amateur clubs are participating in the Fifth National Competition.





"CanSat" orientation training



Mission №1	Mission №2
	
<ul style="list-style-type: none"> ✓ КАНСАТ-ын даалгаврыг багууд өөрсдөө тодорхойлно. ✓ Цойлуураас салснаас хойш (агаарт байхдаа) даалгавар гүйцэтгэж эхэлнэ ✓ Эвдрэлгүй газардах ёстой ✓ 330мл лааз (115мм-ийн өндөртэй, 66 мм-ийн диаметртэй, 350гр) ✓ Шүхэр (70мм өндөртэй, 66мм-ийн диаметртэй цилиндр, 150гр.) 	<ul style="list-style-type: none"> ✓ Өгөгдсөн цэгт хүний оролцоогүйгээр өөрөө явж очих ёстой ✓ Богино хугацаанд, хамгийн ойрхон очсон баг хамгийн өндөр оноо авна ✓ Цойлуураас салснаас хойш даалгавар гүйцэтгэж эхэлнэ. Газарт буусны дараа ч даалгавар эхэлж болно. ✓ Эвдрэлгүй газардах ёстой ✓ 230мм –ийн өндөртэй, 130 мм –ийн диаметртэй цилиндрт багтах хэмжээтэй. 1кг-аас хэтрэхгүй жинтэй
Traditional CanSat	Rover

Final competition will be organized in the summer

In total, 24 teams registered for the competition.

КАНСАТ 12 БАГ

Participating universities and teams



MAKEUPACE





CanSat orientation training

2020-01-24

E.Usukhbayar, a master's student at Beihang University in China, gave a training to the participants of the CanSat 2020 competition to guide them on the features, tasks, CanSat structure and his personal experience of the previous CanSat competitions .





BIRDS-3 Uplink Competition



The Mazaalai Satellite and NUM ground station, located at the National University of Mongolia, successfully participated in the **BIRDS 3 project satellite uplink command competition** organized by the Kyushu Institute of Technology for the BIRDS Ground Station Network. Currently, the BIRDS project station network includes Thailand, Taiwan, Malaysia, the Philippines, Sri Lanka, Bangladesh, Ghana, Nigeria, Kenya, Japan, Paraguay, Bhutan, Nepal, and Costa Rica.



Public Astronomy

10-15 June 2019

National University of Mongolia and Mongolian team organized the workshop named “Teacher Training Outreach for Astronomy and Science in Mongolia”

The training workshop creates a platform for professional astronomers, space scientists, and educators to meet and share teaching materials, research methodologies, experiences and learning in the framework of astronomy and science teaching. This training workshop allows school teachers to learn and improve their universe awareness knowledge experience how other nations preserve the astronomical heritage and solve light pollution in order to observe stars and universe. International communities will involve in this activity to achieve our goals. This training workshop will promote lifelong learning opportunities for school teachers and contribute to the development of science technology and astronomy education in Mongolia and neighboring countries.



Public Astronomy



There were many experts in public astronomy field invited from around the world



Professor Tsolmon – Head of **Space Science and Remote Sensing Laboratory** – gave the opening speech



Public Astronomy

“IAU Women and Girls in Astronomy Day”
2019 in Mongolia



Public Astronomy

Summer camp for school children for “ Space science and natural heritage” in August 10-15, 2019
in Arkhangai Province, Mongolia



Public Astronomy

Mobile Planetarium for primary school students



Public Astronomy

Young amateur astronomers expressed interest in IAU100



**END OF REPORT
FROM
MONGOLIA**

NepaliSAT-1 and its Ground Station: In brief



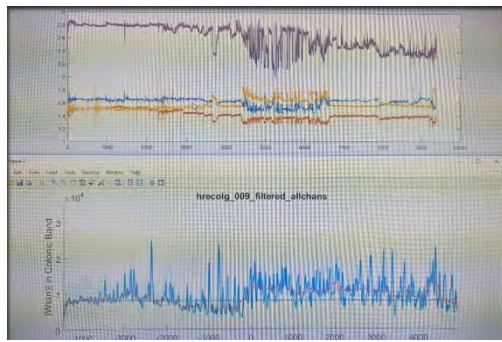
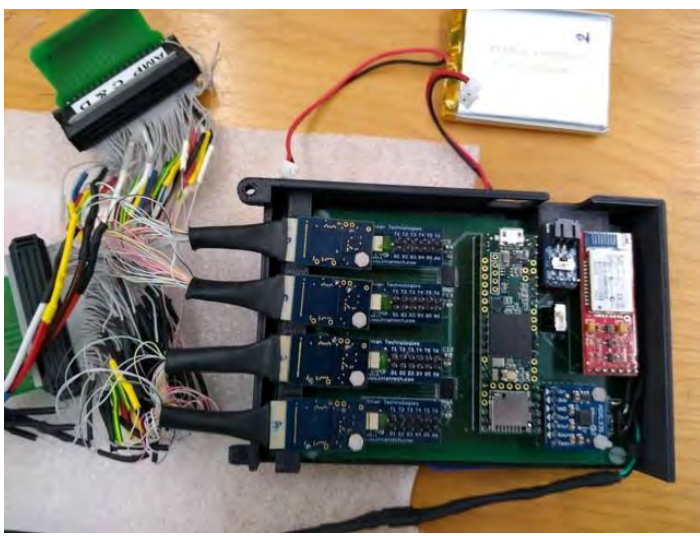
Riwaj Shrestha

Washington and Lee University

Lexington, Virginia, USA

Intern Researcher in NAST, Nepal in 2019

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



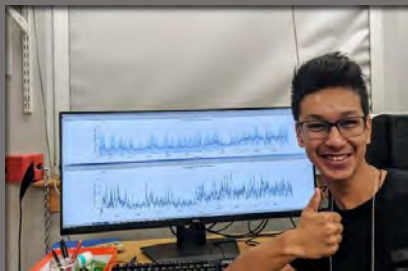
Working with the data...



Who is a Riway SHRESTHA? Introduction:

Riway Shrestha is a Nepalese who is currently doing his bachelor degree in engineering course in Washington and Lee University in USA.

When he came back home in summer vacation in Nepal last year in 2019 he applied the short term internship application and he had got Intern in the Faculty of Technology, NAST. During that time he worked at the NAST ground station work with team .He helped the team and learned about the installation and calibration process of the antenna and radio system of Ground Station of BIRDS-3 Nanosatellite. He prepared the Report for NAST as well as for KyuTech to his about the Ground station of NAST.

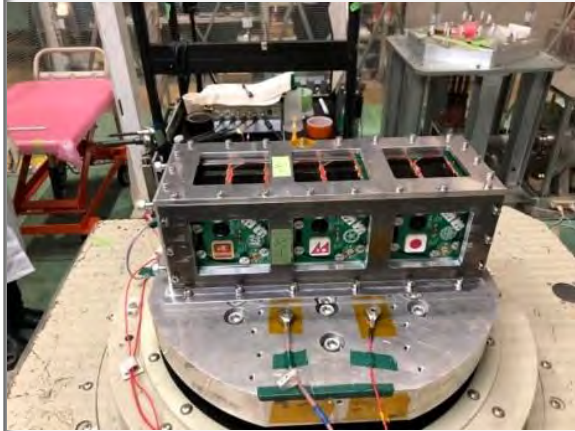


Riway Shrestha



-Hari Ram Shrestha. BIRDS-3; 10 May 2020

BIRDS 3 is the carrier satellite that transports the NEPALISAT-1 to the International Space station, from where it is deployed into Earth's orbit.



Birds -3



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



Ground station



ANTENNA SETUP

WHAT HAPPENED THIS SUMMER

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



During NAST GS setup time: Roshan Pandey & Riway Shrestha in NAST

Rotator & Radio Setup

Lets take the Ultra high frequency Antenna,
Frequency(f)= 437 MHz (437 X 10⁶)

$$v = F\lambda$$

$$F\lambda = v$$

$$\lambda = \frac{v}{F}$$

$$\lambda = \frac{3 \times 10^8}{437 \times 10^6}$$

$$\lambda = 0.687\text{m}$$

$$\text{Length of antenna} = \frac{\lambda}{2}$$

Length of antenna = 34.4 cm
(driver antenna)

The collage contains the following elements:

- Top Left:** A screenshot of the 'CW Skimmer 2.1' software interface, showing a spectrogram of a signal and a frequency display for 'TMUHYLF BIRD3 NPECT A 387 996 640'.
- Top Right:** A satellite coverage map showing the orbital path of the BIRDS-3 satellite over the Indian subcontinent and surrounding regions, with a callout for 'NEPALISAT1'.
- Bottom Left:** A block diagram of the system architecture. It is divided into an 'Encode/Decode Part' (containing a PC with operation software and tracking software) and an 'Antenna Control Part' (containing a rotator controller and interface). The 'Outdoor' section includes a UHF antenna, LNA, radio, and rotator, all connected to the PC via RS-232 and audio lines.
- Bottom Right:** A screenshot of the 'BIRDS-3 CW Analysis Software V2' control panel. It features various input fields for call sign, UTC, satellite, and CW code, along with a 'Start CW' button. Below these are two columns of monitoring data for 'CW Type1' and 'CW Type2', including battery voltage, current, temperature, and gyroscope readings.

Cw skimmer/Software

THE END OF REPORT FROM NEPAL



16. Report from Honduras



UNAH
UNIVERSIDAD NACIONAL
AUTÓNOMA DE HONDURAS



Reynel's university
and his flag

Mr. Reynel Josué Galindo is a new member of SEIC.

Due to COVID-19, he is still stuck in his home country, the Honduras. However, in time, he will get to Kyutech and join us as the newest student member of SEIC.

In the first "Report from the Honduras", he introduces himself, his university, its space efforts, and his country.

-- The Editor, 12 May 2020

Self Introduction



My name is [Reynel Josué Galindo](#), and I obtained both a Bachelor in Industrial Electrical Engineering and a Bachelor in Industrial Mechanical Engineering at the National Autonomous University of Honduras (UNAH). I have worked on different design projects such as an adaptive security system for conventional lathes, a cold storage cryptocurrency wallet and SCADA systems for steel products manufacturing processes.

I was recently given the opportunity to be part of Project Morazan in the near future and since then I decided to focus my career on space engineering. For this, I started my Master's degree on Kyutech this year as part of this project and I am very excited for what is to come.

Honduras is a country where this field of study has not yet been developed, and I want to partake on changing this fact by managing space faring projects in the future. **10 May 2020.**

REPUBLIC OF HONDURAS



Honduras is a Central American country with Caribbean Sea coastlines to the north and the Pacific Ocean to the south.



City of Tegucigalpa, at Night.

Honduras has a beautiful contrast of industrialized cities and many different natural landscapes.



In the Caribbean Sea are the Bay Islands, a diving destination that's part of the 1,000km-long Mesoamerican Barrier Reef.



Aside from Honduras beautiful beaches, there are a lot of natural tourist destinations inside the country, such as mountains and rivers with magnificent landscapes.



General Information

Population: 9.5 million
Area: 112,492 km²
Official Language: Spanish
Capital: Tegucigalpa



In the tropical rainforest near Guatemala, the ancient Mayan ceremonial site Copán has stone-carved hieroglyphics and stelae, tall stone monuments.



UNAH
UNIVERSIDAD NACIONAL
AUTÓNOMA DE HONDURAS

The National Autonomous University of Honduras is the national public university of Honduras. Founded in 1847, it has over 140 programs from the Bachelor's level to the Doctorate, and is the largest and highest ranked University in Honduras. The university is completely autonomous and is self-governed, having 6% of Honduras National Budget in its favor.



University City, UNAH's main campus located in Tegucigalpa seen from above.



UNAH has around 90,000 students enrolled each semester. UNAH's university city is home to a sports complex named “Palacio Universitario”, which has the 7,500 seat “Estadio Olímpico José Trinidad Reyes”, opened to the public in 2014. The university has 40 teams, including basketball, volleyball, soccer, and futsal. Located in the university city is also the Central American Astronomy Observatory of Suyapa (OACS/UNAH), which uses a 42 cm Meade telescope. www.faces.unah.edu.hn

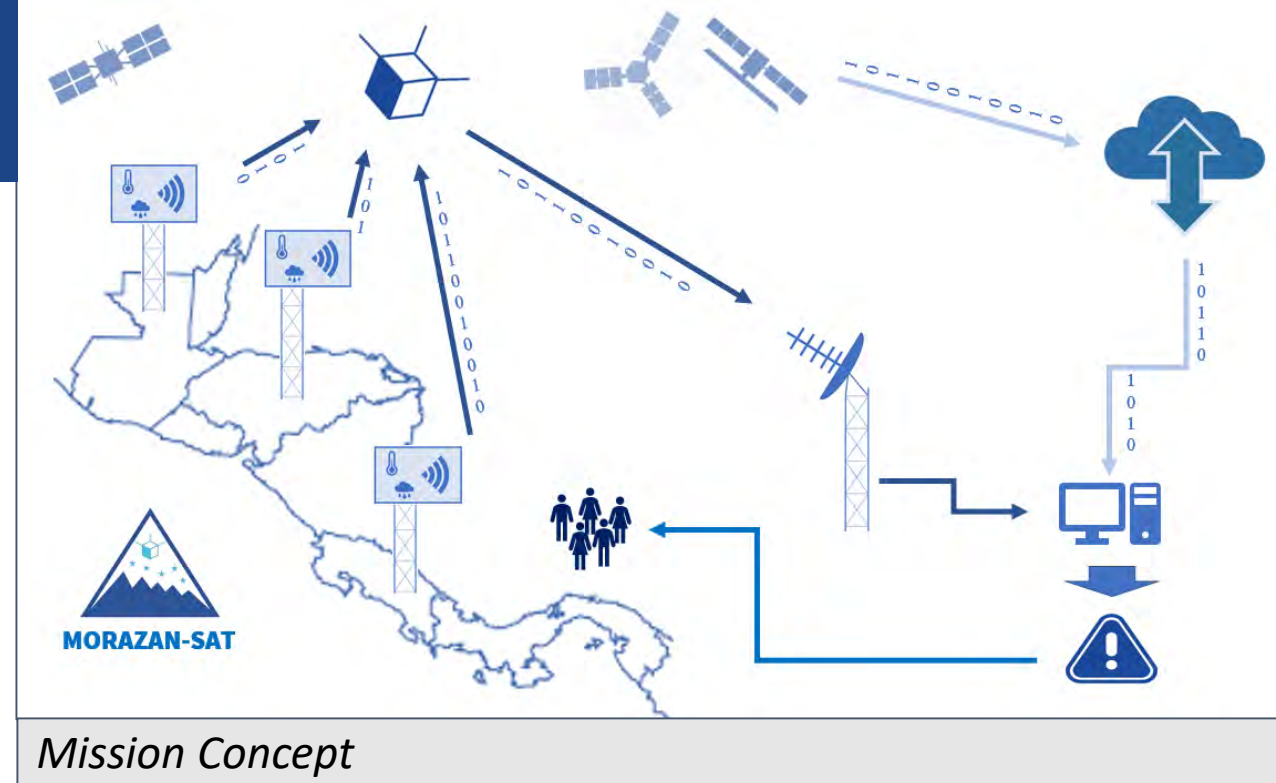
Project Morazán

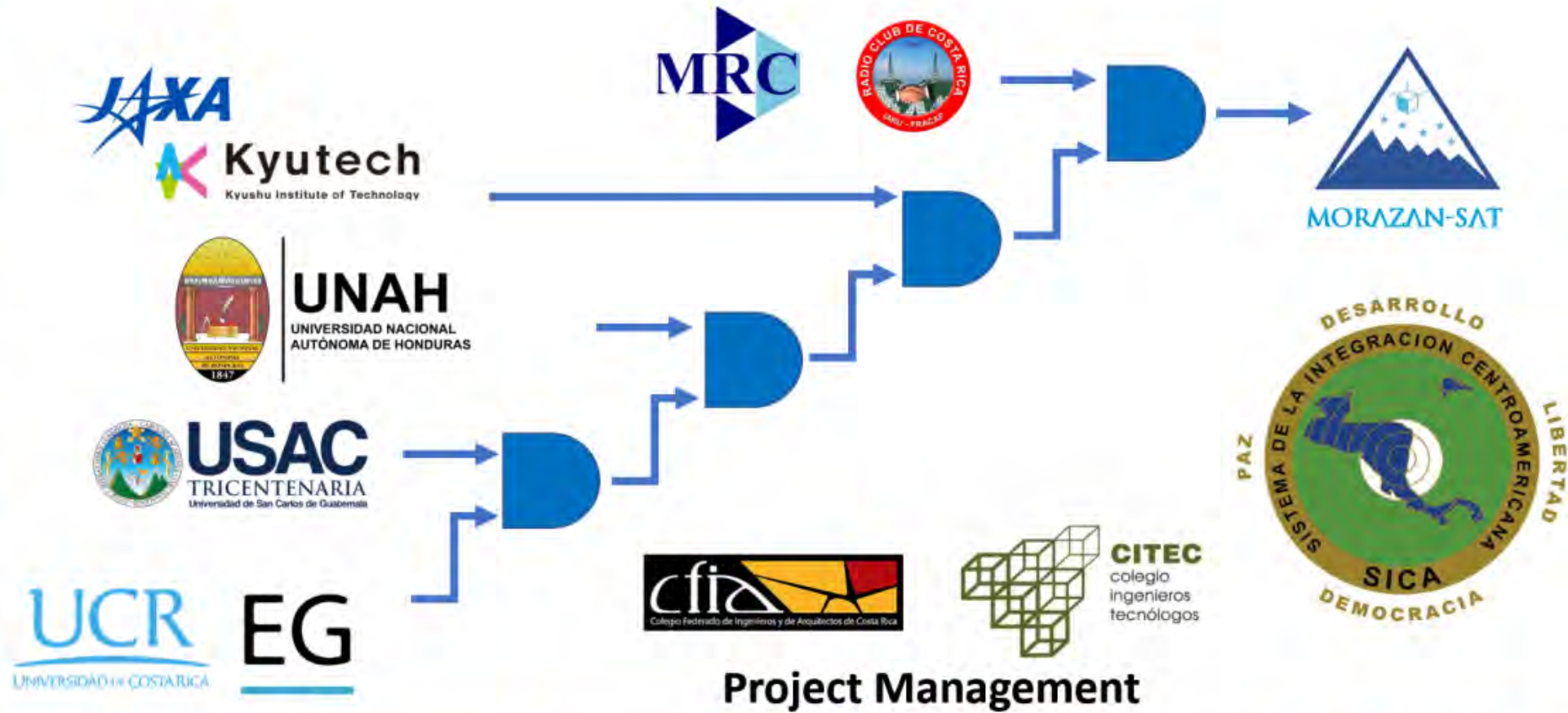
Morazán is a project for integration of the Central American Nations through collaboration in Space. The project consists in developing a CubeSat by Honduras professionals, with the collaboration of Costa Rica professionals' developers of the first Central America Satellite and Guatemala professionals' winners of Kibo Cube 2nd call.

As Central America is a region with high exposure to natural disasters and with territories ranked among the highest risk in the world, the satellite's scientific mission will be the development of early warning system for floods and landslides, which can operate in remote zones

with little to no access to communications, and additionally the use of the same system for post emergency communications will be tested. The satellite will test the use of packet radio communications protocol for both the monitoring of environmental variables and the communications for emergency response. [1]

[1] Monge, Luis & Briceño, Alvarado & Molina, Maria & Zorto, Fernando & Gross, Eduardo & Mejuto, Javier & Hernández, Víctor & Becker, Mr. (2019). MORAZÁN MRZ-SAT CUBESAT PROJECT FOR INTEGRATION OF THE CENTRAL AMERICAN NATIONS THROUGH COLLABORATION IN SPACE.





Pre-phase A	Phase A	Phase B	Phase C	Phase D	Phase E	Phase F
Concept Studies	Concept & Technology Development	Preliminary Design & Technology Completion	Final Design & Fabrication	System Assembly Integration & Test, Launch	Operations & Sustainment	Closeout

THE END OF REPORT FROM HONDURAS



17. Report from Uganda

The following is a report from Uganda.



It was received on 12 May 2020. It was written by the Ugandan Team of the BIRDS-5 Project. They are:

- **BONNY OMARA**
- **EDGAR MUJUNI**
- **DERRICK TEBUSWEKE**

You can read their self-intros on pages 31-42 of **BIRDS Project Newsletter** Issue No. 50.

Covid 19 Situation In Uganda

Uganda registered its first case of COVID-19 on 21 March 2020 and, as of 11 May, had registered 121 cases. The initial cases were mostly imported by Ugandans coming back home.

The country has for days not identified new cases of the disease from the community, and its most cases are the truck drivers transiting through the country from the East African regional countries. A total of 57 cases are from Truck drivers, constituting 47% of the total cases registered.

Out of the 121 confirmed cases, recoveries are at 55, with Zero deaths. Samples tested for the disease now stand at 58,606, with 657 still under institutional quarantine.



Fig. 1: COVID-19 status in Uganda as of 11/MAY/2020.



Figure 1. Trucks wait in a line on the road to enter Uganda at Malaba in western Kenya on April 29. Uganda continues to register Covid-19 cases mainly from truck drivers from neighbouring countries.

On right, trucks being disinfected.



Timeline;

On 18 March, public gatherings including places of worship, pubs, weddings, music shows, rallies and cultural meetings were suspended for 32 days with immediate effect. Foreigners and Ugandans arriving in the country were put under 14-day mandatory quarantine in hotels designated by the government.

The first confirmed case was a 36-year-old male who had travelled to Dubai on 17 March 2020 for a business trip. On returning to Uganda on 21 March 2020 at around 2 am aboard Ethiopian Airlines, his temperature was said to be at 38.7 during the screening process at Entebbe Airport which prompted the health team to isolate him at the airport for further follow up.

On 24th March, all schools and universities were closed for 30 days. On 25 March, public transport was suspended for 14 days. Only private cars with not more than three occupants are allowed on the road.

On 26 March, police and other security personnel were heavily deployed in all city suburbs, slums and along the streets to enforce the president's directives. On 30 March, the President declared a nationwide curfew from 7 pm to 6:30 am, which would run for 14 days to prevent the spread of the disease.



Fig. 2: Left, Police officer performs a thorough inspection in order to avoid unnecessary outing.

On right, majority of Ugandans turned to bicycles after stopping of public transport.



On 18 March, President Yoweri Museveni banned all incoming and outgoing travel to specified highly affected countries for a period of 32 days. The president extended the lock down period for another 21 days on top of the 14 days. This lock down period continued from April 15 and will run up to May 05, later on the president extended the lockdown for more 14 days till 20th May, while relaxing on some restrictions and opening hardware shops.



Fig. 3:
Deserted streets of
Kampala City



Government stopped commercial flights on March 22 and allowed cargo flights to continue as part of the emergency measures to fight the Covid-19 pandemic.



Fig.4:
On left, the airport being disinfected.

On right; Parts of the City being disinfected by Ministry of Health officials.



COVID-19: Government Response Stringency Index, Jan 22, 2020 to May 6, 2020



The Government Response Stringency Index is a composite measure based on nine response indicators including school closures, workplace closures, and travel bans, rescaled to a value from 0 to 100 (100 = strictest response).

This index simply records the number and strictness of government policies, and should not be interpreted as 'scoring' the appropriateness or effectiveness of a country's response.



Source: Hale, Webster, Petherick, Phillips, and Kira (2020) Oxford COVID-19 Government Response Tracker – Last Updated 11th May. OurWorldInData.org/coronavirus • CC BY

On April, 4th, Uganda started relief food distribution to about 1.5 million urban poor people who are affected by the lockdown as a measure to contain the COVID-19 outbreak in the country.



Fig. 6:
Left, Prime Minister flags off trucks to deliver food relief items to the urban poor.



On right:
Security Minister with the relief items.

On April 9th, The president banned all outdoor workouts as the latest measure to enforce social distancing . The directive came after videos of people jogging and doing aerobics in groups in the capital, Kampala, were shared on social media. He urged the public to exercise from their homes, with a short video of himself demonstrating how to use an Office space or a living room for exercises.



Fig. 5:
Showing The President
jogging and exercising
from his office to
encourage people be fit
while at home



The Covid 19 pandemic also enabled Ugandan scientists to come up with innovations that would help the country win the battle against the virus. For example; A team of Makerere University researchers and engineers from Kiira Motors Corporation successfully completed engineering tests on an affordable ventilator prototype on 22nd of April. And on 18th April, The Uganda Army launched a mobile fully equipped hospital to treat Covid 19 patients.



Fig. 6:
On left, A cheaper ventilator developed by Uganda scientists.

Right:
A mobile hospital launched by the Uganda Army to treat Covid 19 patients.



Relaxation of restrictions

On May 4th, The President started relaxing some restrictions as cases from the community dropped and below were some of the new guidelines;

- Face Mask is mandatory whenever in public.
- Airports and borders stay closed.
- Wholesale shops to open.
- Car garages to open.
- Restaurants to open but only for takeaways.

The situation is being monitored for the next 14 days till 20th May, upon which more relaxations are expected to be announced basing on scientific Advice and status of community cases.

Key Policy Directives from the May 4th Presidential Address on Covid-19

- 1 **Food markets** will stay open
- 2 **Airport & borders** stay closed
- 3 **Wholesale shops** to open
- 4 **Hardware shops** to open
- 5 **Garages** to open
- 6 **Metal & wood workshops** to open
- 7 **Insurance** providers to function
- 8 Quota of **lawyers** (30) to be permitted to work
- 9 **Restaurants** to open but only for takeaways
- 10 **Warehouses** To open
- 11 **Schools** plus other facilities that attract large numbers to stay closed
- 12 Public & private **cars** still not operational. Only private cars with stickers to move. To facilitate those working, use marked buses, walk or cycle.
- 13 It's mandatory to wear **cloth masks** in public

ALL OTHER EARLIER PROTECTIVE MEASURES **STAY IN PLACE FOR ANOTHER 14 DAYS**

@kagutamuseveni

Lastly, We hope and pray that this pandemic ends soon so that we can fully join the BIRDS 5 Project. For the time being, please stay home and stay safe. Let us together flatten the curve by staying home, washing hands and restricting movements.

THE END OF REPORT FROM UGANDA



OLAYINKA'S WORLD

18. Olayinka's World – Column #16

COLUMN NO 16

OLAYINKA FAGBEMIRO
NATIONAL SPACE RESEARCH & DEVELOPMENT AGENCY(NASRDA), ABUJA. NIGERIA
ASST. CHIEF SCIENTIFIC OFFICER, HEAD, SPACE EDUCATION UNIT



COVID-19 PANDEMIC IN NIGERIA

It is no longer news that Covid-19 pandemic has wrecked and is still wrecking so much havoc globally. The outbreak of the coronavirus which started from Wuhan, China, late 2019 has since become a pandemic, with over 3million infections globally causing over 250,000 deaths already.

Nigeria is no exception, as the country recorded her index case, February 28th, 2020. Even though the government worked so hard to contain the spread as well as keep the figures as low as possible, this was only possible during the first 2 months as the figures soon spiked, causing the government to impose a total lockdown in 2 major states and the Federal Capital Territory for 5 weeks even as people are encouraged to maintain social distancing and increase hygiene.

The lockdown, which brought upon untold hardship on the citizens was soon relaxed as people protested unprecedented losses in their sources of livelihood due to the fact that a huge percentage of Nigerians work in the informal sector of the economy. The palliatives provided by the government nonetheless, the outcry against the lockdown went unabated forcing a review of the imposed lockdown on the 4th of May, 2020 when the total lockdown was eased.

The country has since witnessed a spike in infection rates and the number of deaths has since gone up from under 50 to almost 120 a week into the ease on the lockdown. The Covid-19 Pandemic is biting the hardest in the rural parts of Nigeria. Majority of these people are feeling the pangs of hunger and poverty at these very strange times because of the lockdown imposed by government, preventing them from accessing their means of daily livelihoods.

Most of these communities do not have access to constant water supply to be able to sustain and adhere to the health advice of frequent hand washing. Sadly, their major concern at this time, is to beat hunger and stay alive even as they hope the Covid-19 pandemic somehow spares them. The palliatives provided by the government and other donors have not really eased the hunger as such because of the huge number of people who are living below the poverty line in Nigeria.

There is a very low rate of awareness on social and physical distancing as being a major means of preventing community transmission of the Coronavirus. Nigeria now has over 3000 cases of infection, even as health and government authorities decry the danger of community spreading of the virus. The rates of new infections, since the first cases of community transmission was announced has been unprecedented.

The government has since eased the lockdown and the economy is being opened up gradually even as schools remain shut indefinitely and the ban on interstate travel remains in place. As the whole world grapple with the devastating impact of the covid-19 pandemic, while eagerly awaiting a quick intervention either in the form of a potent drug for managing Covid-19 or a vaccine, one thing is obvious, a lot of these disruptions are here to stay.

Received 12 May 2020 by the editor.

END OF REPORT FROM NIGERIA

19. Space4Youth Competition 2020



UNITED NATIONS
Office for Outer Space Affairs



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[Our Work](#) > [Space4Youth](#) > [Space4Youth Competition](#) > [2020 Competition](#)

Space4Youth Competition 2020

Are you passionate about space and sustainable development? Do you want to make a difference and contribute to achieve SDG 13 Climate Action?

Participate in the 2020 Space4Youth Competition:

CONTINUED NEXT PAGE

SEE: <https://www.unoosa.org/oosa/en/ourwork/space4youth/competition/2020/index.html>

Space4Climate

Space as a tool to address climate challenges: examples from local communities

Climate change is the defining issue of our time. From shifting weather patterns to rising sea levels, the impact of climate change is global in scope and unprecedented in scale. Action is needed and young people play a key role. UNOOSA and SGAC want to give a voice to and promote youth's ideas on how space, in all its aspects, can mitigate climate challenges.

HOW TO PARTICIPATE?

Submit an essay on "*Space as a tool to address climate challenges: examples from local communities*". The focus of the Competition is on [SDG 13: Climate Action](#). We want to hear your ideas on how space can be used to tackle climate challenges underlining concrete, realistic and original examples of how space policy, space law, international cooperation in space, space technologies and other applications can address climate change in local communities.

The selected winner(s) will:

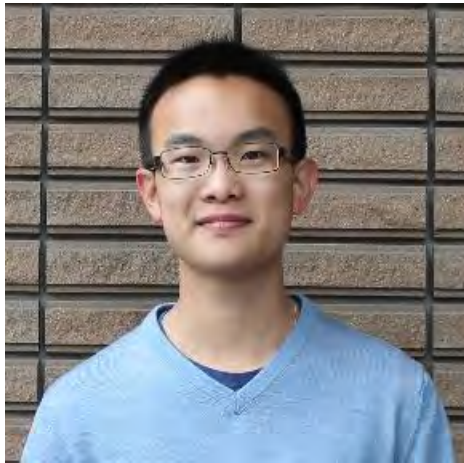
- Be invited to participate to [19th Space Generation Congress 2020](#) and present his/her essay during one of the planned events. Due to current COVID restrictions, the Congress will be organised virtually.
- Have the abstract of the essay submitted in the form of a Conference Room Paper at the 63rd session of the Committee on the Peaceful Uses of Outer Space (COPUOS) to be presented to delegates from Member States.
- Have the essay uploaded on the "Space4Youth" webpage of UNOOSA.

SEE: <https://www.unoosa.org/oosa/en/ourwork/space4youth/competition/2020/index.html>

**BIRDS-4 Reports
are on the following pages**



BIRDS-4 Ground Station Software Decoder



Timothy Ivan Leong

May 7, 2020

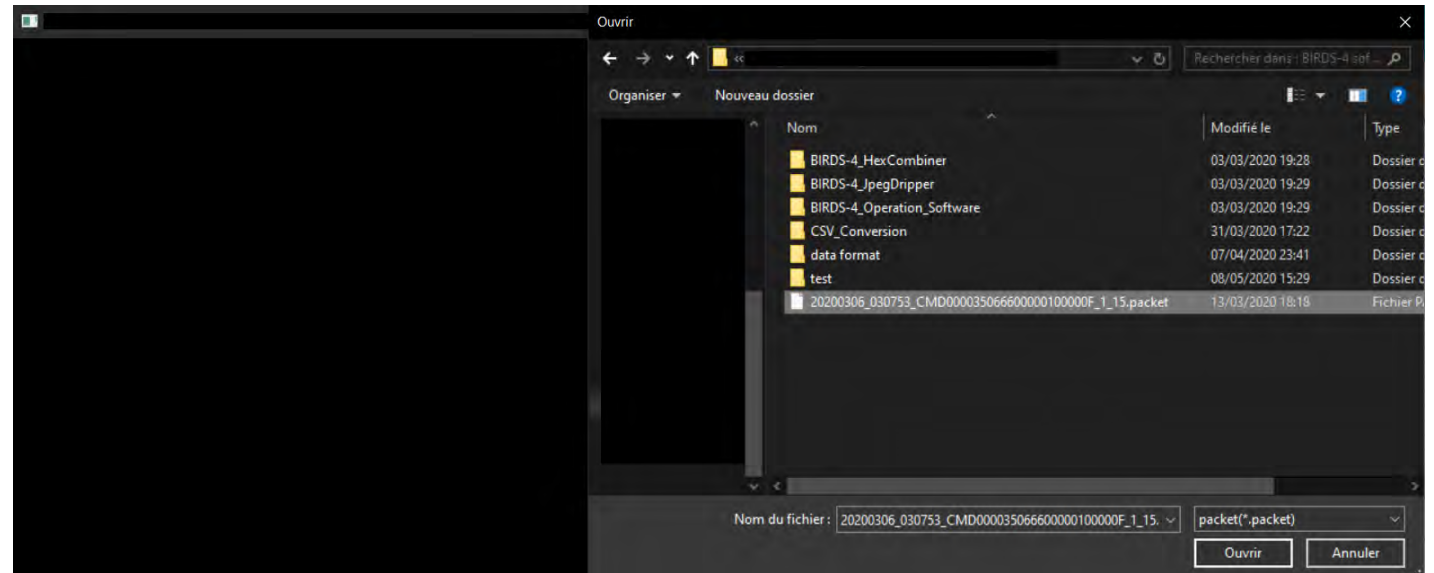


BIRDS-4 Ground Station Software Decoder

In March issue, I presented the ground station software and how to handle it. This month, I want to talk about the additional program that have been created alongside the ground station software. This program will allow us to decode the data -that the ground station receives- into a readable format for the user.

By selecting the hex data the ground station receives, the program can automatically recognize the mission that it needs to decode, then save the decoded data as an excel file. For example, for the PSC mission (kindly refer to BIRDS-4's March 2019 article for more detailed information), the program will decode the data into voltage and current values.

The excel files can be created if there were no previous existing data or the data can just be added to an existing excel file.



Selecting the packet to decode

The program doesn't have a user interface right now and is just run through a console interface. However, the selection of the file and the folder selection for saving the decoded data is done through windows folder interface so it is quite easy to use.

Decoded data saved as CSV (« , » are actually « . » this is the French format of presenting numbers)

	A	B	C	D
1	Voltage_1	Current_1	Voltage_2	Current_2
2	0,7927	99,16	1,3051	277
3	1,4179	99,08	1,4131	277
4	1,4066	99,08	1,401	277
5	1,3921	99,16	1,3873	277
6	1,3792	99,16	1,3744	277,32
7	1,3656	99	1,3623	276,92
8	1,3527	98,92	1,3486	276,92
9	1,3398	99,32	1,3365	277
10	1,3269	99,08	1,3237	277
11	1,314	99	1,3124	276,92
12	1,3011	99,08	1,3027	277,08
13	1,289	99,08	1,2866	277,08
14	1,2761	99,08	1,2721	276,84
15	1,2624	99,08	1,2592	276,92

How to Live in Quarantine



Yasir M. O. ABBAS

May 7, 2020



How to Live in Quarantine

Written By: Yasir ABBAS

Due to the COVID-19 accelerated situation, Fukuoka and other Japanese prefectures announced a state of emergency since April 7, 2020.

It is not the same as the state of emergency in the rest of the world. For example, in my country -Sudan- a total lockdown is declared. People are not allowed to go further than the nearby supermarket unless they have permission.



Try cooking traditional food recipes



Nearby central park to visit while protecting the social distance



More time with family members

Whether you are in a lockdown or quarantining yourself at home there are plenty of stuff you can do to survive this tough time, you can even turn it to an enjoyable and useful period.

While staying at home, try finishing the postponed activities resting for months and maybe years in your 'to-do list'. If you have a good internet connection at home, use it wisely, and be creative. Make 'online visits' to be socially connected. Keep advancing your personal and career lives through online courses. Learn something new.

Quarantine is an opportunity to get rid of fast food. Eat and cook healthy food. Also, don't forget to do sport in the nearby park. You can as well carry out indoor exercises.

Moreover, find new hobbies, read books and enjoy this free unplanned vacation time.

Effectiveness of Video-conferencing During the Pandemic



Hoda El-Megharbel

May 7, 2020



Effectiveness of Video-conferencing during pandemics

Written By: Hoda Awny El-Megharbel

The global spread of COVID-19 is pushing towards innovative solutions to keep up regular business, education and other activities to take place after closing off many premises and employees choosing to work from home to avoid contact with others and further spread of the virus. Video-conferencing is one of the best solutions that help employees to connect remotely and effectively. Using this technology as the most reliable alternative to a face-to-face interaction; enabling idea-sharing during meetings even though members are not in the same place. This approach in running a business or connecting people will have a long-lasting impact even after the situation changes and it's safe to return to workspaces.



Even though video-conferencing has some advantages, also some challenges exist.

Among the advantages of using different available platforms are the features available within these platforms such as keeping records, generating transcripts and providing timestamps to live meetings to enhance the communication process and to ensure important points are not missed out.

Moreover, using this technology has saved lots of money and time usually spent to gather different parties in an in-person meeting.

Although video conferencing could provide an efficient way to gather staff quickly to discuss time-sensitive situations, it is important to maintain a strong Internet connection to avoid cutting calls which might not be professional. In addition to considering different time zones for international events. In KyuTech, we are following the global trend in using this technology to conduct meetings and projects discussions including our laboratory kick-off which took place in April, gathering staff and students virtually from their homes.

My Travel Back to Nepal



Hari Ram Shrestha

May 8, 2020



Back to Nepal: My Travel Experience

Written By: Hari Ram SHRESTHA

After 15 months of staying in Japan, Prof. Cho allowed me to visit my home in Nepal for a month starting from January 14. I was very excited to meet my family, especially since my little son celebrated his 2nd birthday. Moreover, my sister -in -law had her wedding ceremony, which I was able to attend.

I travelled alone. I got to experience a new route and sights via Japan's transportation system.

If you want to travel inside Japan you have different kind of options to use transportation system like by road, by airways, by sea route.

For me, the experience was good because I gained some new ideas about the Ferry service and Metro train system of Japan.

In Nepal, long distance travel from one place to another is only possible by road or airways. Because Nepal is a landlocked country sea travel is not possible while train service is not as extensive as Japan.

Nowadays, I am thinking of why my country is not developing?? I hope our political leaders would learn something from Japan and implement it in Nepal.

I believe in coming days my country's youth leader will correct the current administration system.

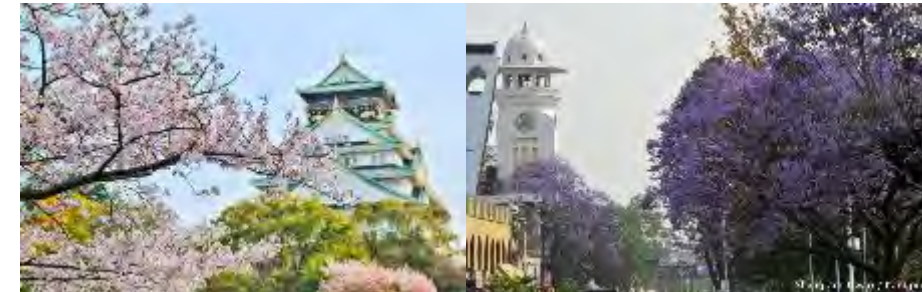
The most interesting part of this journey for me was during my Ferry trip from Shin Mojiko, Kitakyushu to Nanko Port, Osaka. On the other hand, I could not sleep well the whole night because of the ferry's vibration during the course. I also felt sea sickness that time since it was my first time travelling by ferry.

Japan



Nepal

Image Source: Flags(sunshinesmile),Lasor Travel (Left) U.S.Embassy Nepal (right)



Cherry blossom in Osaka, Japan and Jacaranda Flower in Kathmandu, Nepal

Kitakyushu to Osaka Travel

Written By: Hari Ram Shrestha

Thanks to Pooja, I was able to reserve a the ticket for this City Line Ferry. Dinner and breakfast were available inside the restaurant but you can also enjoy your own food there.

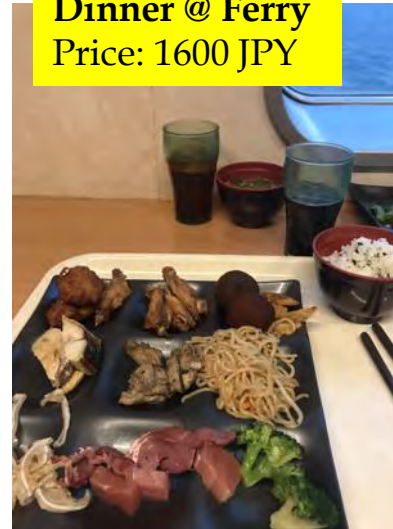


- Bus is free from Kokura to Shin Moji.
- Pick up point in front of is north gate of JR Kokura Station
- The bus time:
From Kokura station, Moving the 1st bus time is 15:40 and the 2nd bus time is 18:40

Kokura Station



Dinner @ Ferry
Price: 1600 JPY

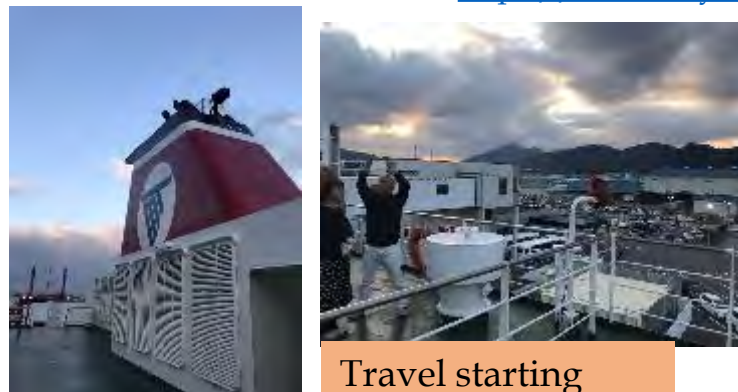


If you want to go Osaka by Ferry please you can check more information from the website below:
<https://www.cityline.co.jp/english/>.



Inside the Ferry

Reservation confirmed
Price: 5390 JPY for
Tourist cabin



Travel starting



Journey



From Osaka to Kathmandu, Nepal

Written By: Hari Ram Shrestha



Sakai Station

Train route and schedule to Kansai

7:11	Shin-osaka Station
7:20	Tenri Station
7:30	Sakai Station
7:44	Higashi-Sakai Station
7:58	Suwayama Station
8:12	Yokkaichi Station
8:24	Gakusa Station
8:38	Sakai Station
8:52	Yokkaichi Station
9:04	Gakusa Station
9:18	Sakai Station
9:32	Yokkaichi Station
9:44	Gakusa Station
9:58	Sakai Station
10:12	Yokkaichi Station
10:24	Gakusa Station
10:38	Sakai Station
10:52	Yokkaichi Station
11:04	Gakusa Station
11:18	Sakai Station
11:32	Yokkaichi Station
11:44	Gakusa Station
11:58	Sakai Station
12:12	Yokkaichi Station
12:24	Gakusa Station
12:38	Sakai Station
12:52	Yokkaichi Station
13:04	Gakusa Station
13:18	Sakai Station
13:32	Yokkaichi Station
13:44	Gakusa Station
13:58	Sakai Station
14:12	Yokkaichi Station
14:24	Gakusa Station
14:38	Sakai Station
14:52	Yokkaichi Station
15:04	Gakusa Station
15:18	Sakai Station
15:32	Yokkaichi Station
15:44	Gakusa Station
15:58	Sakai Station
16:12	Yokkaichi Station
16:24	Gakusa Station
16:38	Sakai Station
16:52	Yokkaichi Station
17:04	Gakusa Station
17:18	Sakai Station
17:32	Yokkaichi Station
17:44	Gakusa Station
17:58	Sakai Station
18:12	Yokkaichi Station
18:24	Gakusa Station
18:38	Sakai Station
18:52	Yokkaichi Station
19:04	Gakusa Station
19:18	Sakai Station
19:32	Yokkaichi Station
19:44	Gakusa Station
19:58	Sakai Station
20:12	Yokkaichi Station
20:24	Gakusa Station
20:38	Sakai Station
20:52	Yokkaichi Station
21:04	Gakusa Station
21:18	Sakai Station
21:32	Yokkaichi Station
21:44	Gakusa Station
21:58	Sakai Station
22:12	Yokkaichi Station
22:24	Gakusa Station
22:38	Sakai Station
22:52	Yokkaichi Station
23:04	Gakusa Station
23:18	Sakai Station
23:32	Yokkaichi Station
23:44	Gakusa Station
23:58	Sakai Station



Kansai International Airport



Japan has a direct flight to Nepal



Kansai International Airport

Being new to the place, I got confused in following the train schedules. Considering that I was carrying a heavy bag, I actually felt nervous at the same time.

Thankfully, I reached Kansai International Airport in Osaka in time for my flight. I felt relieved.



Nepal's Nation Flag airlines

<https://www.nepalairlines.com.np/home>



Waiting for train for direct transfer to the Kansai Int. Airport

Simultaneous Connection Test for the Remote Classes



Daisuke Nakayama
April 30, 2020



Simultaneous Connection Test for the Remote Classes

Written By: Daisuke Nakayama

Kyutech is under lock-down due to the state emergency declaration. University stopped physical classes and scheduled online classes, instead.

We're using Moodle for e-learning. Large number of simultaneous connection needed to be tested to verify that student would be able to use the website without problems. Therefore, a simultaneous connection test was held.

The test name was 「工学部バルス」 (Faculty of Engineering “Balse”). This name came from the “Balse Festival”, which occurred when “Castle in the Sky” (Laputa) was re-aired on Japanese TV in 2013. At the moment, when the spell called “Balse” was said at the end of the anime, a ridiculous amount of tweets were sent from Japan.



“工学部バルス” = (Faculty of Engineering “Balse”)

There are 5 types of testing:

1. Chat.
2. Movie
3. Tele-conference
4. File transfer
5. File download

It actually set a record for the highest number of tweets sent in a single second with 143,999 tweets (previous record was 33,388 tweets).

These were the tests performed:

1. Chat message
2. Posting in forum
3. Uploading an assignment
4. Taking a quiz
5. Watching a video

There seemed to be some issues with the chat, but no major issues involving the whole system.

From May 7, remote classes have started safely using this system. I hope that the coronavirus will settle down soon and the usual student life will return.

NASA Space Apps COVID-19 Challenge



Yuma Nozaki
May 6, 2020



Hackathon for COVID-19

Written By: Yuma Nozaki

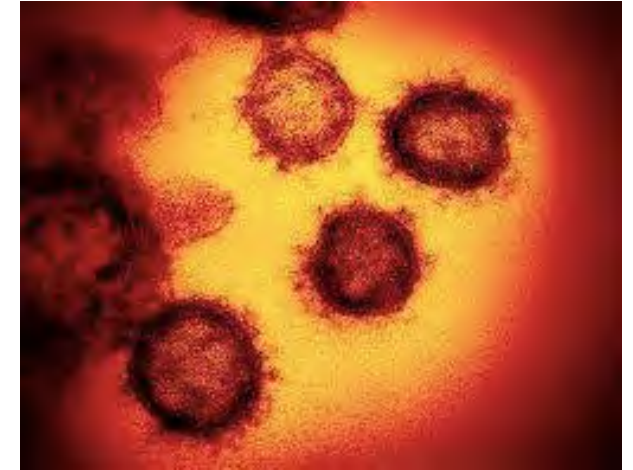
NASA, ESA, and JAXA announced they will hold a Hackathon event to develop COVID-19 solutions on May 30-31.



Logo of the project [\[source\]](#)



App for smart-phone [\[source\]](#)



COVID-19 [\[source\]](#)

Hackathon is one of app development challenge event. The merit of this event is that the new apps are developed in a short amount of time. It is very powerful and efficient way of IT development.

Hopefully, people will develop an app that is useful for us to solve the COVID-19 problems after this event.

If you interested in this event, [click here!](#)

<https://www.youtube.com/watch?v=QCiERL2m3Ss>

END OF BIRDS-4 REPORTS for this month



Mr.Children 「終わりになき旅」 MUSIC VIDEO

1,263,849 views -- Apr 6, 2020

26. Report from Paraguay



FIUNA



FPUNA



UNG



Agencia Espacial del Paraguay – Paraguay Space Agency
(AEP)

Capacity BUilding in REsearch & Innovation

For Space

The “CABURE+I 4S” Project

Newsletter

News from Paraguay

14 May 2020

Contributors:

Students and members of
The CABURE+I 4S Project Team

Edited by:

Cristhian Coronel

The “CABURE+I 4S” Project Newsletter

News from Paraguay

Working from home during these quarantine days

As of today, Paraguay has been in a quarantine status for two months due to the novel Coronavirus outbreak. Students and teachers from the CABURE’I 4S Team is still working on their respective areas. Some of them, like student Luis Miranda, is working on satellite communication systems.

On these days, sharing a simple class demands the use of new ways of communication, such as the online video conference. These technologies are also used for teaching and interacting with webinars. In this case, our colleague Luis Miranda was invited to share his knowledge about communication systems he has been studying during his graduation project.

Luis Miranda Kunert Is an Electronic Engineering Student and also Teaching Assistant in the subject of “**Antennas and Propagation**” at the Asuncion National University (UNA).

I am very happy to share my knowledge and experiences related to the **GuaraniSat01** and the **BIRDS-4** Project to students from different Schools and Universities of Paraguay.



Cristhian Coronel, Electromechanical Engineering student from Universidad Nihon Gakko (UNG)
May 2020

The “CABURE+I 4S” Project Newsletter

News from Paraguay

Holding a Webinar about my final degree Project and experiences on building a Ground Station for GuaraniSat01.

Last week, I was invited by the IEEE community from Paraguay to hold a webinar, and to present my final degree project. It is entitled **“LOW-COST AND PORTABLE STUDENT GROUND STATION FOR TRACKING LEO SATELLITES TO PROMOTE CAPACITY BUILDING IN TELECOMMUNICATION AREA.”** My advisors are PhD. Miki Saito, PhD. Diego Stalder, and MSc. Federico Gaona.

This was the poster for the event. As I am not an IEEE member nor volunteer, having this chance was an honor for me.



This was one of the slides during my presentation at the webinar.

TE INVITAMOS A LA CHARLA:

“SISTEMA DE TELECOMUNICACIÓN PARA EL ENLACE CON SATÉLITES DE ÓRBITAS LEO QUE POSIBILITEN LA UTILIZACIÓN DE LA FUNCIÓN APRS-DP, CASO GUARANISAT01, PRIMER SATELITE PARAGUAYO DEL PROYECTO BIRDS-4”

FECHA: 21 DE ABRIL.

HORA: 17 HS.

LINK DE ACCESO EN LA DESCRIPCIÓN



After the webinar, people from the IEEE Communications Society invited me to be part of a conference in Ecuador.

Luis Miranda Kunert, Electronic Engineering student from Universidad Nacional de Asunción (UNA) – Facultad de Ingeniería (FIUNA)
May 2020

The “CABURE+I 4S” Project Newsletter

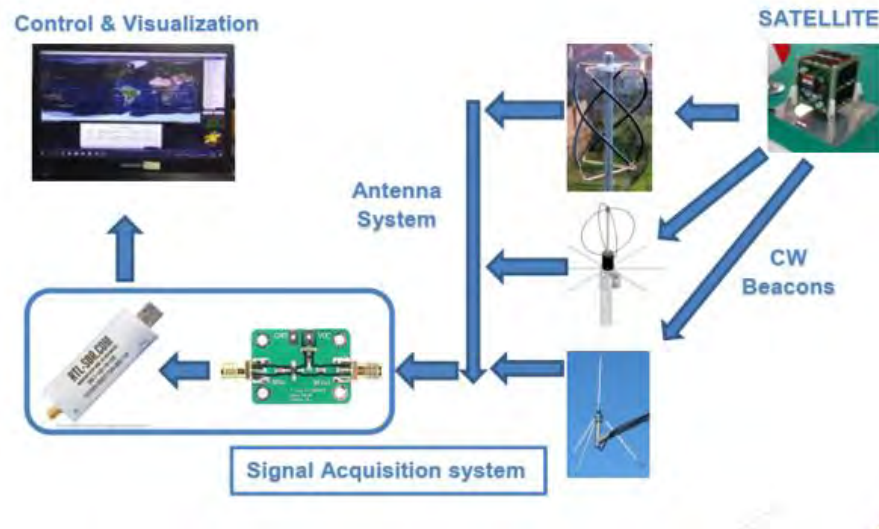
News from Paraguay

Holding a Webinar about my final degree Project and experiences on building a Ground Station for GuaraniSat01.

This work is about two designs, it included both, development and setup, for a low-cost ground station at the National University of Asunción.

One design is only for signal reception purposes, in order to accomplish satellite beacons on Continuous Wave (CW) mode signals using accessible electronic devices such as PC, Software Defined Radio (SDR) and also contrasting different types of omnidirectional antennas.

Model 1 – “Only-Receiving” Ground Station



Luis Miranda Kunert, Electronic Engineering student from Universidad Nacional de Asunción (UNA) – Facultad de Ingeniería (FIUNA)
May 2020

The “CABURE+I 4S” Project Newsletter

News from Paraguay

Holding a Webinar about my final degree Project and experiences on building a Ground Station for GuaraniSat01.

The second design consists in a half full-duplex telecommunication system, capable of transmitting and receiving packet radio at Amateur X.25 (AX.25) protocol. This offers data rates of 1200 bps Audio Frequency Shift Keying (AFSK) for digital satellite communication, all by using a Handy Terminal (HT) Frequency Modulation (FM) transceiver, a low-cost Terminal Node Controller (TNC) and azimuth-elevation tracking system, both based on an Arduino hardware.

The second one will be capable of automatic tracking the selected Low Earth Orbit (LEO) satellites by a circularized-polarized antenna. Tests are still undergoing and preliminary results will be presented.



This ground station will represent the National University of Asunción contribution to the GuaraniSat01 S&F Mission of the Paraguay Space Agency, and it will also promote studying of telecommunication through satellites in schools and universities.

END OF REPORT FROM PARAGUAY

Model 2 – Half/Duplex “Tx/Rx” Ground Station

Luis Miranda Kunert, Electronic Engineering student from Universidad Nacional de Asunción (UNA) – Facultad de Ingeniería (FIUNA)
May 2020

27. Report from Zimbabwe

ZIMBABWE NATIONAL GEOSPATIAL SPACE AGENCY



By:

- **Timothy**
- **Ramson**
- **Victor**

Zimbabwe
members of
BIRDS-5

15 May 2020

OBJECTIVES OF ZINGSA



- **TO PROMOTE PEACEFUL USE OF SPACE**
- **TO SUPPORT THE CREATION OF AN ENVIRONMENT CONDUCIVE TO INDUSTRIAL DEVELOPMENT IN SPACE TECHNOLOGY**
- **FOSTER RESEARCH IN GEOSPATIAL SCIENCE AND EARTH OBSERVATION, SPACE SCINCE, SPACE ENGINEERING, COMMUNICATIONS, NAVIGATION AND SPACE PHYSICS ADVANCE SCIENTIFIC, ENGINEERINING AND TECHNOLOGICALS COMPETENCES AND CAPABILITIES THROUGH HUMAN CAPITAL DEVELOPMENT**
- **TO FOSTER INTERNATIONAL COOPERATION IN SPACE RELATED ACTIVITIES**

ZINGSA ORGANISATION



MINISTER

ZINGSA BOARD

DIRECTOR GENERAL

TECHNICAL DEPARTMENTS

FINANCE, ADMIN AND HR

GEOSPATIAL
SCIENCE AND
EARTH
OBSERVATION

SPACE
OPERATIONS
AND LAUNCH

SPACE SCIENCE

SPACE
ENGINEERING

GEOSPATIAL SCIENCE AND EARTH OBSERVATION DEPARTMENT



**DEVELOP AND IMPLEMENT GEOSPATIAL TECHNOLOGY INCLUDING
PRECISION AGRICULTURE.**

**IMPLEMENT THE NATIONAL EARTH OBSERVATION STRATEGY AS DEFINED
BY THE ZINGSA.**

**DEVELOP AND PROMOTE NATIONAL, REGIONAL AND INTERNATIONAL
PARTNERSHIP AND COLLABORATION IN GEOSPATIAL SCIENCE AND
EARTH OBSERVATION.**

**DEVELOP AND PROMOTE HUMAN AND INSTITUTIONAL CAPACITY IN THE
FIELD OF GEOSPATIAL AND EARTH OBSERVATION IN ZIMBABWE.**

SPACE OPERATIONS AND LAUNCH SERVICES DEPARTMENT



THE SPACE OPERATIONS AND LAUNCH SERVICES IS RESPONSIBLE FOR:

PREPARATION AND IMPLEMENTATION OF EARTH OBSERVATION MISSIONS.

SATELLITE COMMAND AND CONTROL.

MANAGING COMMUNICATION BETWEEN SPACECRAFT, GROUND STATIONS AND CONTROL CENTRES.

LAUNCH SERVICES INCLUDING FACILITATING ACCESS TO SPACE FOR THE ZINGSA MISSIONS



SPACE SCIENCE DEPARTMENT

KEY AREAS OF RESEARCH:

SPACE PHYSICS

ASTROPHYSICS

SPACE WEATHER

PLANETARY SCIENCE

SPACE ENGINEERING DEPARTMENT

- **ELECTRICAL ENGINEERING.**
- **AERONAUTICAL ENGINEERING.**
- **ASTRONAUTICAL ENGINEERING.**
- **MECHANICAL ENGINEERING.**
- **SYSTEMS ENGINEERING.**
- **ELECTRONICS, MECHATRONICS AND RADIO ELECTRONICS ENGINEERING.**
- **ROBOTICS.**
- **UNMANNED AERIAL VEHICLES (UAV).**



FINANCE AND ADMINISTRATION DEPARTMENT



- ◆ **DEVELOPING BUSINESS PLANS, TIMELINES AND BUDGETS TO PERFORM FINANCIAL PROJECTS.**
- ◆ **MONITORING AND MANAGING EXPENDITURE WITHIN ALLOTTED BUDGETS.**
- ◆ **ESURE THE PREPARATION AND MAINTANANCE OF ALL FINANCIAL RECORDS.**
- ◆ **IDENTIFY AND RESOLVE FINANCIAL AND ADMINISTRATIVE ISSUES.**
- ◆ **CONSISTS OF FINANCE AND AUDIT, ADMINISTRATION AND HUMAN RESOURCES SECTIONS.**

END OF REPORT FROM ZIMBABWE



UiTMSAT COLUMN

Column No. 5

Editor: **FATIMAH ZAHARAH BINTI ALI**
PhD CANDIDATE, LABORATORY OF SPACE WEATHER AND SATELLITE SYSTEM
FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA (UiTM), SELANGOR, MALAYSIA

MALAYSIAN NATIONAL SPACE AGENCY

Malaysia used to have two separate entities for space related activities before those two were merged into one agency named MALAYSIAN SPACE AGENCY or formally called as MYSA. Before the merging took place in around February 2019, all upstream and downstream activities were distinctively executed by ANGKASA and ARSM, respectively. ANGKASA is an abbreviation of ‘Agensi Angkasa Negara’ in Malay language which means National Space Agency while ARSM is Malaysian Remote Sensing Agency. The merging was an initiative of Ministry of Energy, Science, Technology and Climate Change (MESTECC) in improving the effectiveness and

28. Column #5 from Malaysia



UNIVERSITI
TEKNOLOGI
MARA

*UiTM Sentiasa Di Hatiku
“UiTM Always in My Heart”*



*Fig. 1: ARSM
located in Federal
Territory of Kuala
Lumpur*

AGENSI ANGKASA MALAYSIA
KEMENTERIAN SAINS, TEKNOLOGI DAN INOVASI



*Fig. 2: ANKASA
located in
Banting, Selangor*



efficiency of performing space related works by using the existing resources and facilities with optimality while reducing the cost of the executions. Besides, it was an initiation for the implementation of the country's National Space Policy 2030.

For additional information, in March 2020 where the new government cabinet has been formed, MESTECC is now known as Ministry of Science, Technology and Innovation or simply MOSTI.

MYSA has been given responsibilities in acquiring the capacity to perform the space technology and applications for the country. Based on the functions stated publically in the website, MYSA is required to develop the comprehensive and coordinated capability for space ventures, implement the research for solution of related space science, acquire and provide satellite data for analysis

purpose, applying the national space policy, and strengthen the local expertise by promoting and coordinating the international and local space activities.



Fig. 3: Some of the Research and Development (R&D) programs developed by MYSA to support the consumer agencies particularly in agriculture, land, disaster management, and security, using remote sensing system approaches.

From top left: Forest monitoring system, property evaluation and monitoring system, precision fishery system, a system that update precise location with active dengue outbreak (i-Dengue and SPWD), biodiversity information system, flood detection, paddy management system



Fig. 4: One of the facilities provided by MYSA, anechoic chamber for antenna measurement



Fig. 5: One of the facilities provided by MYSA, TVT chamber for satellite testing



Fig. 6: One of the facilities provided by MYSA, Integrating sphere for camera calibration



AGENSI ANGKASA MALAYSIA
KEMENTERIAN SAINS, TEKNOLOGI DAN INOVASI

Led by Mr Azlikamil Napiah, the Director General of MYSA, the entity has performed numerous space endeavours including the obligation in introducing the space science and technology to the youths of the country. One of the initiatives is by holding a miniature satellite contest through an event called Malaysia SiswaSAT Competition. Siswa is a Malay word which means students, specifically from higher learning institution and Sat is a short-form of a satellite.

Latest, SiswaSAT2020 competition is scheduled to be held from 18th May – 23rd Oct 2020. Opened to all university and school students in Malaysia, this competition carry an objective to expose the students with the process of developing a can-sized satellite. Technically, the event is created for education purpose to elevate the interest of the youths in space science, engineering and technology, by allowing them to actively experience the operation of space program. This is a good start to produce human capital that experts in respective space field as youths are the treasure of the country development.

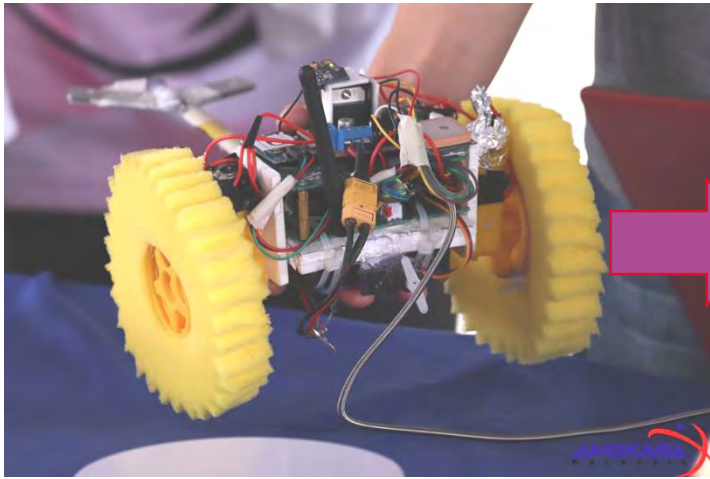


Fig. 7 (a): Developed cansat



Fig. 7 (b): Developed cansat



Fig. 7 (d): Ground operation



Fig. 7 (c): Cansat was inserted inside drone's box

The evaluation of the competition started by reviewing the students' presentation and submitted proposal on mission design that must contain all requirements stated in the guidelines, including their pilot power, creativity and new ideas. Students' team with accepted proposal will proceed to the Preliminary Design Review (PDR) and later to Critical Design Review (CDR). On the day of cansat launching, all important criterias such as size, weight, operation systems are evaluated thoroughly. Figure 7(a) – (d) show the process of the launching and operation activities during the SiswaSAT2019

*Acknowledgement:
MYSA for allowing me to briefly write about
the agency and its SiswaSAT Competition*

END OF COLUMN BY FATIMAH

STAMINA4SPACE

PHL
MICROSAT

UPDATES FROM THE PHILIPPINES

May 15, 2020

University of the Philippines-Diliman
Quezon City, Philippines

PREPARED BY:

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STAMINA4Space Project Manager, STeP-UP Project
Contributing Writer and Editor



A global awareness campaign on the impact of satellites constellations to astronomy



Dr. Paul Leonard Atchong Hilario
Chief Science Research Specialist for OPTIKAL



Engr. Philip Keane
Aerospace Engineer and Lecturer for STeP-UP

International Dark Sky Week

April 23, 2020

Dr. Atchong Hilario (Chief Science Research Specialist, OPTIKAL Project) and Engr. Phillip Keane (Embedded Systems Developer, STeP-UP Project and UP Electrical and Electronics Engineering Institute Lecturer) gave their insights as part of the awareness campaign to tackle the impacts of satellite constellations to astronomy and the possible solutions to mitigate them.

The event was hosted by the Astronomers Without Borders and the International Astronomical Union's Dark Sky Ambassadors network.

Photo courtesy of Astronomers Without Borders and the International Astronomical Union's Dark Sky Ambassadors



Today, April 27, 2020, marks the **4th year** since **Diwata-1** was **released to space** from the International Space Station (ISS).

Photo courtesy of JAXA/NASA

Diwata-1 ISS Release Anniversary

April 27, 2020

Diwata-1 was released from the Kibo Module of the International Space Station (ISS) on April 27, 2016.



Happy Earth Day!

April 22, 2020

We know we can't go out to enjoy our pale blue dot's beautiful landscapes and seascapes for #EarthDay2020, so we shared some images captured by Diwata-1 and Diwata-2 instead.

While the Philippines is the priority of our missions, we can also capture images of other parts of the world. Here, we share some previously unreleased images so that we can simultaneously bask in our planet's beauty and reflect on how we can better care for it.

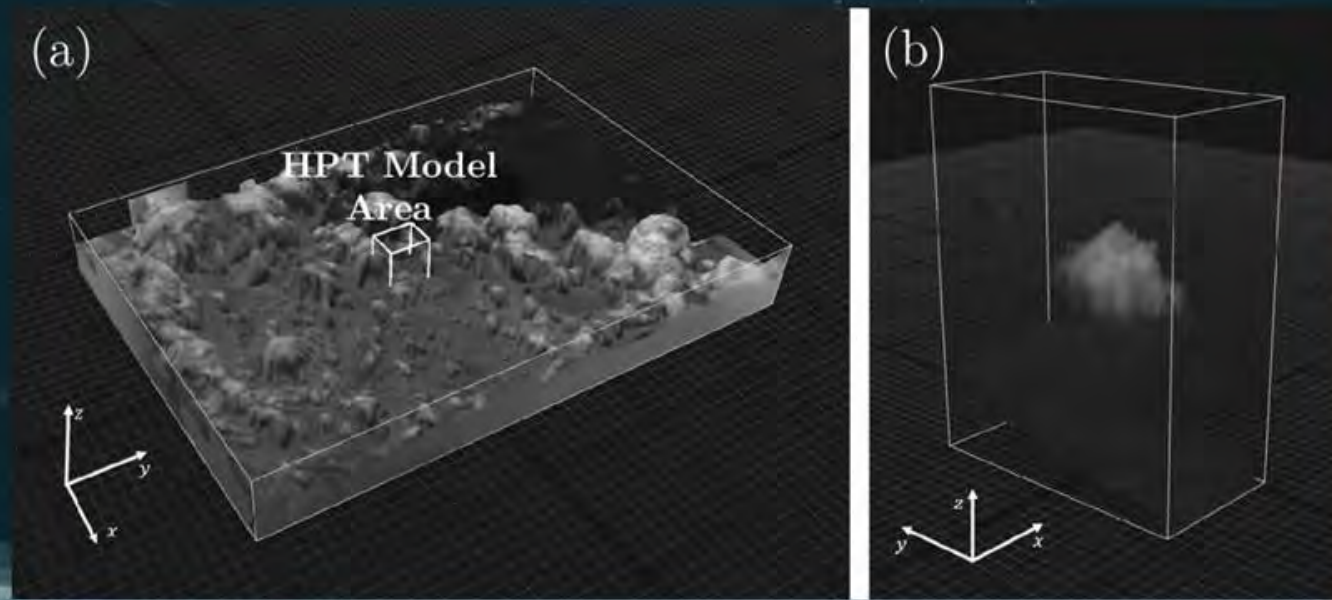


Results of Diwata-1 images used for cloud-top height measurement published in Scientific Reports - Nature

May 5, 2020

In a new study published in the Nature Research international journal Scientific Reports, the use of Diwata-1 data for determining cloud-top height was highlighted. The study is a product of collaborative research among scientists from UP Diliman, DOST-Philippines, Hokkaido University in Japan under the PHL-Microsat (now STAMINA4Space) Program, and the DOST-Advanced Science and Technology Institute's Understanding Lightning And Thunderstorms For Extreme Weather Monitoring And Information Sharing (ULAT) project.

Read on to know more: <https://bit.ly/2YCF3FV>





MENU **SCIENTIFIC REPORTS**

We'd like to understand how you use our websites in order to improve

Article | Open Access | Published: 05 May 2020

Determination of Cloud-top Height through Three-dimensional Cloud Reconstruction using DIWATA-1 Data

Ellison Castro , Tetsuro Ishida , Yukihiro Takahashi, Hisayuki Kubota, Gay Jane Perez & Joel S. Marciano Jr

Scientific Reports **10**, Article number: 7570 (2020) | Cite this article

951 Accesses | 5 Altmetric | Metrics

Life during the COVID-19 pandemic



"Since the quarantine started, it was a rather difficult transition to work from my comfortable office desk to a sofa and makeshift table. Home is typically for resting so the temptation to sleep is there so I made sure to set a routine everyday to push myself to work and do tasks that can be done outside the lab. My work relies heavily on hardware but for the meantime, I'm doing documentation for the previous tasks I've accomplished as well as reading up on research papers and attending online courses that may help with my work. I'm not certain when this quarantine will end but I'm sure of one thing — the true winners of this work setting are dogs."

- JP Almonte, Science Research Specialist



"I'm working on various technical management activities, design of components for CubeSat, reviews of Maya-3 and Maya-4 documents, writing for a journal publication, and coordination with the admin group for procurement activities and project renewal. But my work from home setup revolves around cooking and eating :D"

I'm going to be a master cook after this Enhanced Community Quarantine! :D"

- MZC, Embedded Systems Developer

Life during the COVID-19 pandemic

The current “normal”: Below is a screenshot from a typical OPTIKAL Project meeting. Researchers and staff are now transitioning to maximizing online resources to be able to communicate and work during the pandemic.



“Work was still ongoing for the information group. The only difference is that all communications are done online. Outside of work, I had the opportunity to do things that I am passionate about — creating art. The photo above is one of those examples.

- Ericka Picar, Information Officer

Life during the COVID-19 pandemic



“Currently, I am designing the LoRa-based Ground Sensor Terminal and developing undergraduate courses related to Systems Engineering and Project Management.

Since my regular task focuses on training and undergraduate courses development, no adjustment has been made. These tasks can be done remotely using a computer and the internet. However, one of the situations that hinder my tasks is the poor and intermittent internet connection, which made me work at night to perform the tasks mentioned.”

- Jeric Brioso, Research Engineer



“We challenged ourselves to exercise at home during quarantine. We created a ‘Quarantine Exercise Group’ to be able to check on each other.”

- Vanessa Pataueg, Project Assistant



“I was able to learn how to ride the bicycle during quarantine. Good thing that I was able to go home (to my hometown) before the lockdown and my cousins were able to teach me.”

- Kat Columbano, Project Assistant

Life during the COVID-19 pandemic

Making it work for work (and life)

"Prior to joining S4S, I was working at home on various consultancy jobs so I kinda have a system already :) To share some, these include:

- keeping a schedule for work and household chores,
- eating healthy as much as possible (including taking vitamins!),
- squeezing in yoga practice or dance workout (best done during mornings before you start your routine!), and
- of course, taking breaks (which I also include in my day schedule)!

This time though, I've tweaked my system to include checking stocks and restocking as needed (thanks to online food and grocery services), disinfecting the house once a week, setting up a sub-system to clean stuff coming from outside like groceries, mealtime videocon with my family or communicating with them every day, building my Spotify work/relax/chores playlist, and keeping informed on latest updates.

Despite the global situation, we must find balance and the time to take it easy :) ... like my dog, Yahoo, doing some yoga and chilling with dalgona coffee :)"

F. Mara Mendoza, Project Manager



END OF REPORT FROM THE PHILIPPINES

30. GST (Gnd Station Report) report from Malaysia

The following GST progress report was submitted on 15 May 2020 by Mr. Nik Amirul Aiman Bin Rahmat. He is a student of electronics engineering at Universiti Teknologi MARA (UiTM) Shah Alam, Malaysia. He was selected by UiTM to be a part of the Malaysian GST effort, and he is really working hard at it. Very impressive. -- The Editor.

For more information on GST, see the article by Pooja Lepcha in "BIRDS Project Newsletter", Issue No. 51, pages 133-142. This issue (and all issues) can be downloaded from <http://birds1.birds-project.com/newsletter.html>



اَوْنِيُوْرَسِيْتِي تِي كِنُوْلُوْ كِي مَارَا
UNIVERSITI
TEKNOLOGI
MARA

Development of Ground Sensor Terminal for Nano-satellite Store-and-Forward Application



Author Name: Nik Amirul Aiman Bin Rahmat

Nationality: Malaysian

University: Universiti Teknologi MARA (UiTM) Shah Alam, Malaysia

Education: Bachelor of Engineering (Hons.) Electronics Engineering

Field: Satellite Communication



اُنِيسِيسِي تِكْنُوْلُوجِي مَارَا
UNIVERSITI
TEKNOLOGI
MARA

My role in this project

My role is to design the specification of Ground Sensor Terminal required for this project. I am responsible for the hardware and software configurations which involve the duty of selecting the appropriate main mission, antenna design, and system flow.

Development of Ground Sensor Terminal for Nano-satellite Store-and-Forward Application

Written By: Nik Amirul Aiman

In this modern era, where IR 4.0 were set as a target for every countries and individuals to achieve, there are still people that is struggling to access even the basic internet connection to acquire data and knowledge. Based on the report by World Economic Forum on 2016 [1], there are more than 4 billion people that still do not have access to the internet.

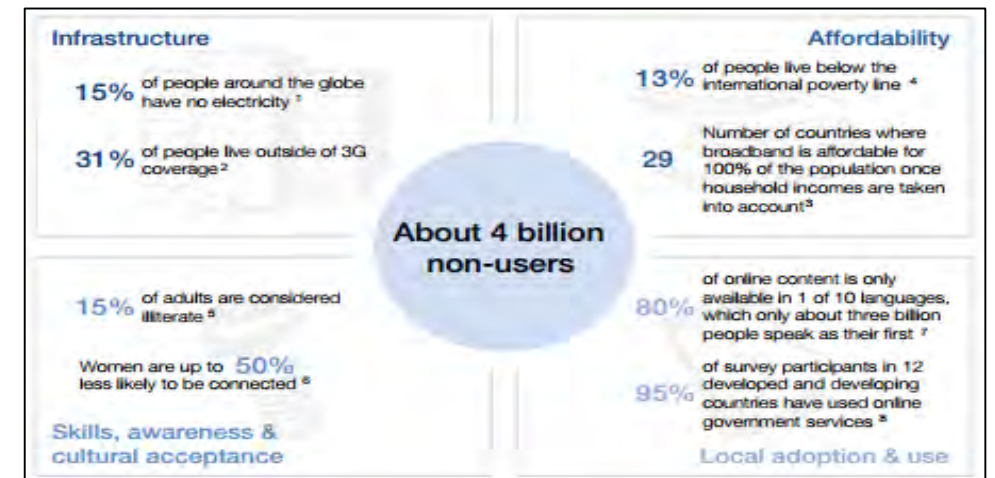


Figure 1: Factors of unreachable internet [1]

Development of Ground Sensor Terminal for Nano-satellite Store-and-Forward Application

Written By: Nik Amirul Aiman

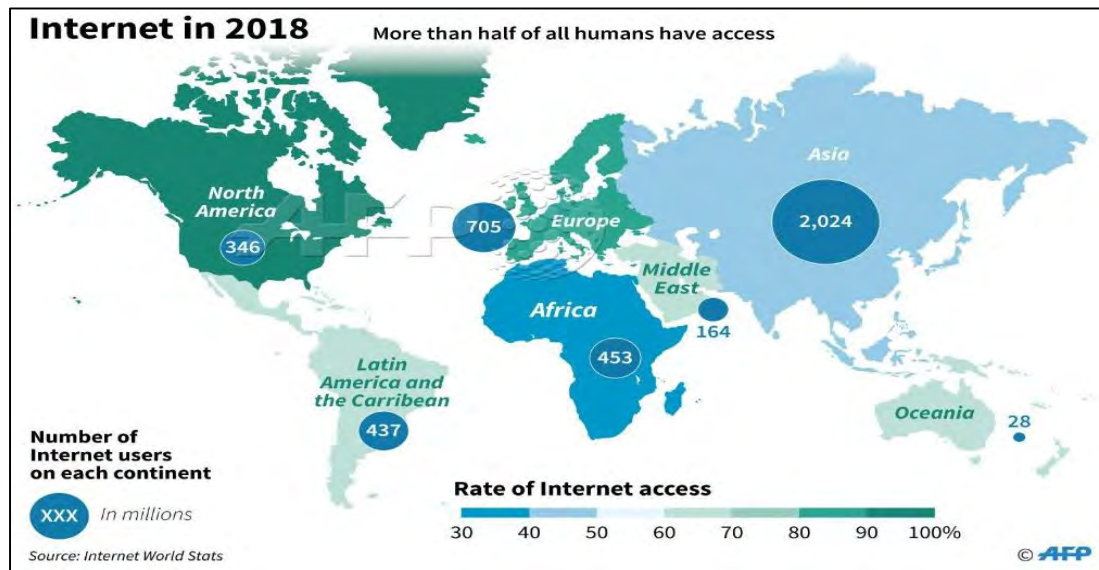


Figure 2: Rate of internet access [2]

The number proves that data acquisition on even the basic information as simple as weather condition will still be hard to reach for some part of the world. This sparks the ambition in initiating this project to increase data reachability from a country to another where data accessibility is low.

Development of Ground Sensor Terminal for Nano-satellite Store-and-Forward Application

Written By: Nik Amirul Aiman

This project uses Store and Forward application which means that information is sent to an intermediate station (satellite), where it is kept and sent at a later time to the final destination. This project were mainly focuses on developing a Ground Sensor Terminal (GST) that focuses on ambient data mission such as the air quality, temperature and humidity, and wind speed information.

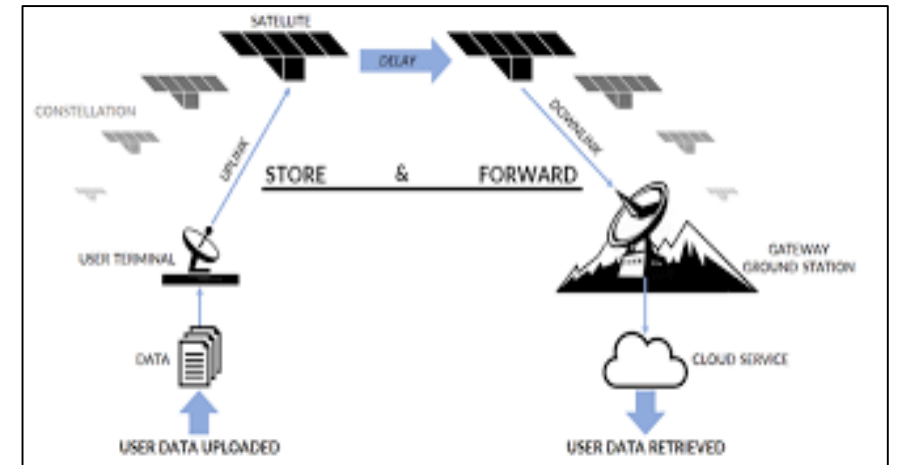


Figure 3: Store and Forward application [3]

The GST is equipped with Long Range module (LoRa) which uses 433 MHz frequency and a DIY antenna.

Development of Ground Sensor Terminal for Nano-satellite Store-and-Forward Application

Written By: Nik Amirul Aiman

This project were commenced on early of March 2020 and at the time of the article is written, the progress of this project is 50% completed which may been delayed due to the COVID-19 outbreak throughout the world. As for now, this project have completed the data transmission from the transmitter to the receiver.

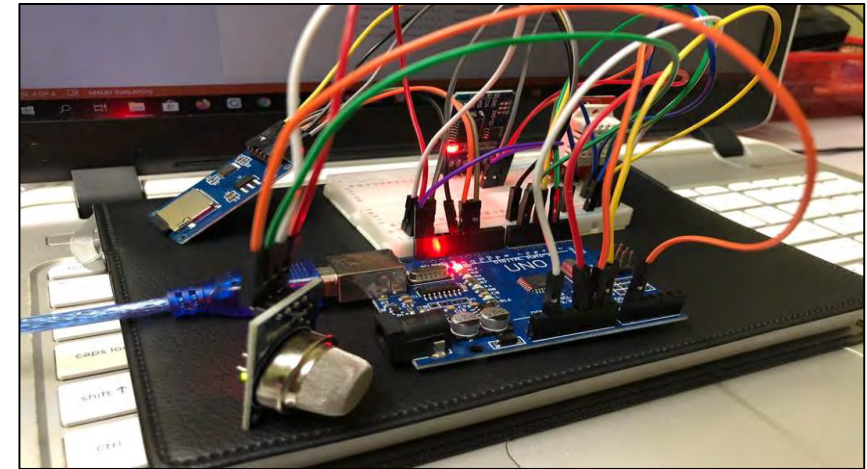


Figure 4: Main section of the ground sensor terminal

Development of Ground Sensor Terminal for Nano-satellite Store-and-Forward Application

Written By: Nik Amirul Aiman

The data acquired from the sensor at the GST is saved to the SD card module, which then will be transmitted to the receiver after a set of time to mimics the behaviour of the nanosatellite's availability for line of sight communication.

END OF THIS GST PROGRESS REPORT

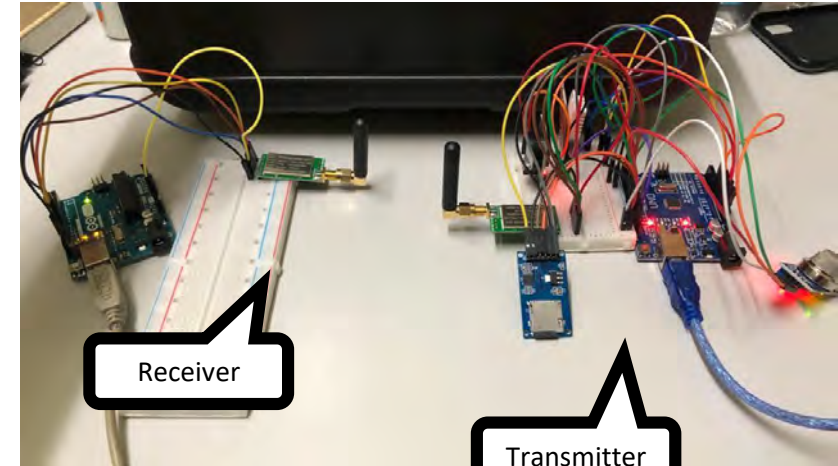


Figure 5: Transmitter and Receiver part

References:

- [1] Luxton, E. (2016, May 11). 4 billion people still don't have internet access. Here's how to connect them. Retrieved May 5, 2020, from <https://www.weforum.org/agenda/2016/05/4-billion-people-still-don-t-have-internet-access-here-s-how-to-connect-them/>
- [2] <https://www.afp.com/>
- [3] <https://www.keplercommunications.com/>

Personal Introduction

For BIRDS Project Newsletter

Kyushu Institute of Technology (九州工業大学)

Joseph Ampadu Ofosu
May 16, 2020

PART I Introduction

Joseph Ampadu Ofosu (Postdoc fellow, April 2020~)

- Joseph graduated from the Kwame Nkrumah University of Science & Technology, Ghana, where he obtained BSc. Electrical/ Electronic Engineering degree in May 2007.
- He worked as an Electrical Engineer at the Kpong Generating Station, Ghana, during his National service till July 2008. Joseph was a Senior Instructor at the School of Engineering in Takoradi Polytechnic (now Takoradi Technical University), from September 2008 – March 2011. Here, he lectured courses such as Electrical Machines, Power Electronics and Control Systems.
- Joseph received the Ministry of Education, Culture, Sports, Science and Technology (MONBUKAGAKUSHO, Japanese Government) scholarship, i.e. MEXT from April 2011 – March 2017. This was via the Japan Embassy, Ghana.

On Drums

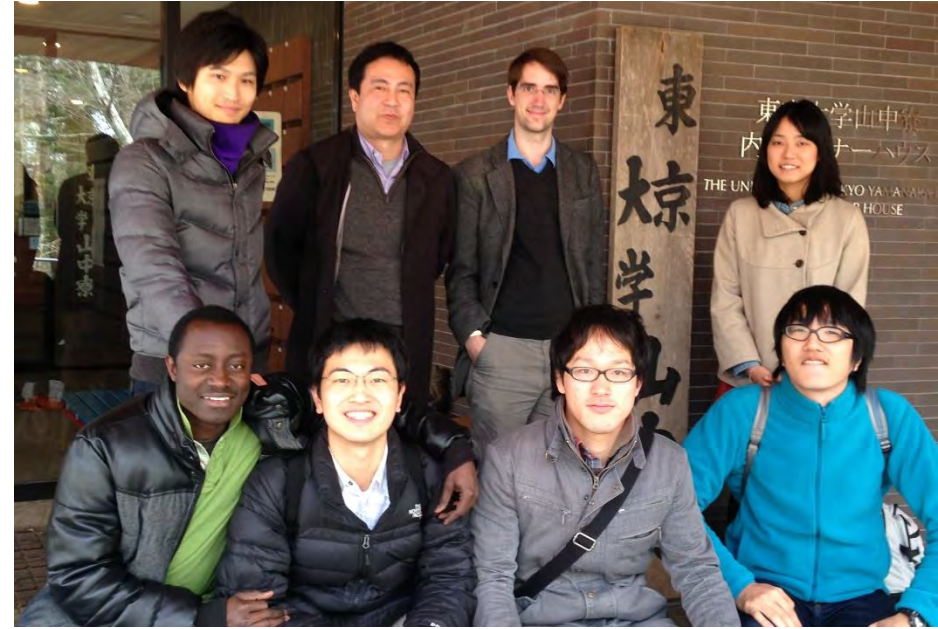


On Piano



PART II Research Background

- Joseph joined the University of Tokyo as a research student in April 2011, and enrolled as a graduate student in April 2012. He obtained his master's and doctoral degrees (Department of Advanced Energy) in March 2014 and June 2018 respectively.
- His research theme was *repetitively pulsed laser propulsion and laser supported detonation wave dynamics*. The objective of this research is geared towards the applicability of laser-induced plasmas (LIPs) to propel vehicles into space without conventional chemical rockets. Thus, he basically studied the dynamics and energy conversion mechanisms in LIPs.



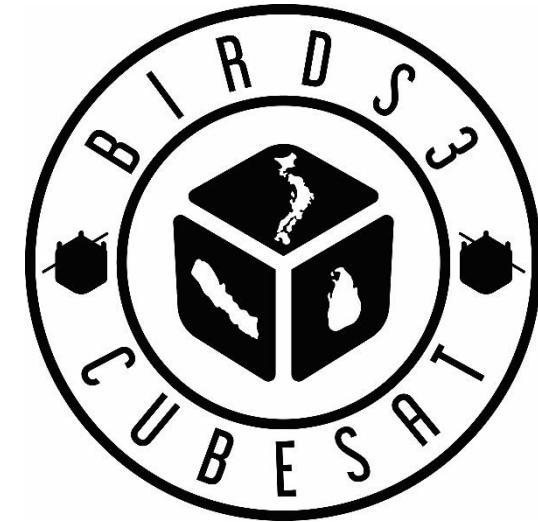
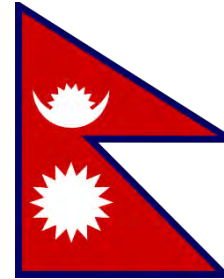
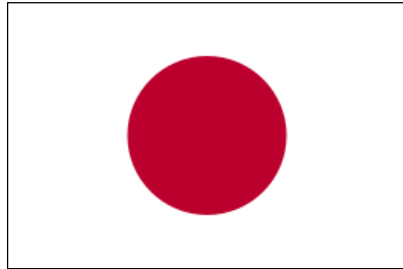
PART III Career, Aspirations, Family life, Hobbies

- Joseph worked with Imagineering, Inc., Kobe (now i-Lab., Inc.) from April 2018 – March 2020 as an R&D engineer. He worked on microwave-enhanced plasmas for spectroscopic applications such as radiative element determination and powder metal detections. He also applied these plasmas for E-coli disinfection and pesticides decompositions. Joseph also conducted plasma-assisted combustion studies with automobile engines.
- Joseph's aspirations at LaSEINE and CeNT is to support the team so as to make the on-going 'smallsat' revolution an entrenched part of Kyutech and to advance the 'New Space' concept for the benefit of humanity and society.
- Joseph is married to Keiko and they have two boys: Yusei and Reima.
- Joseph enjoys contemporary gospel music. He loves dancing, singing and playing the piano or drums. He also enjoys watching and playing soccer.



END OF THIS SECTION

BIRDS-3 ADCS Mission



by Dulani (BIRDS-3, Sri Lanka)

15 May 2020

MTQ Performance During the Mission

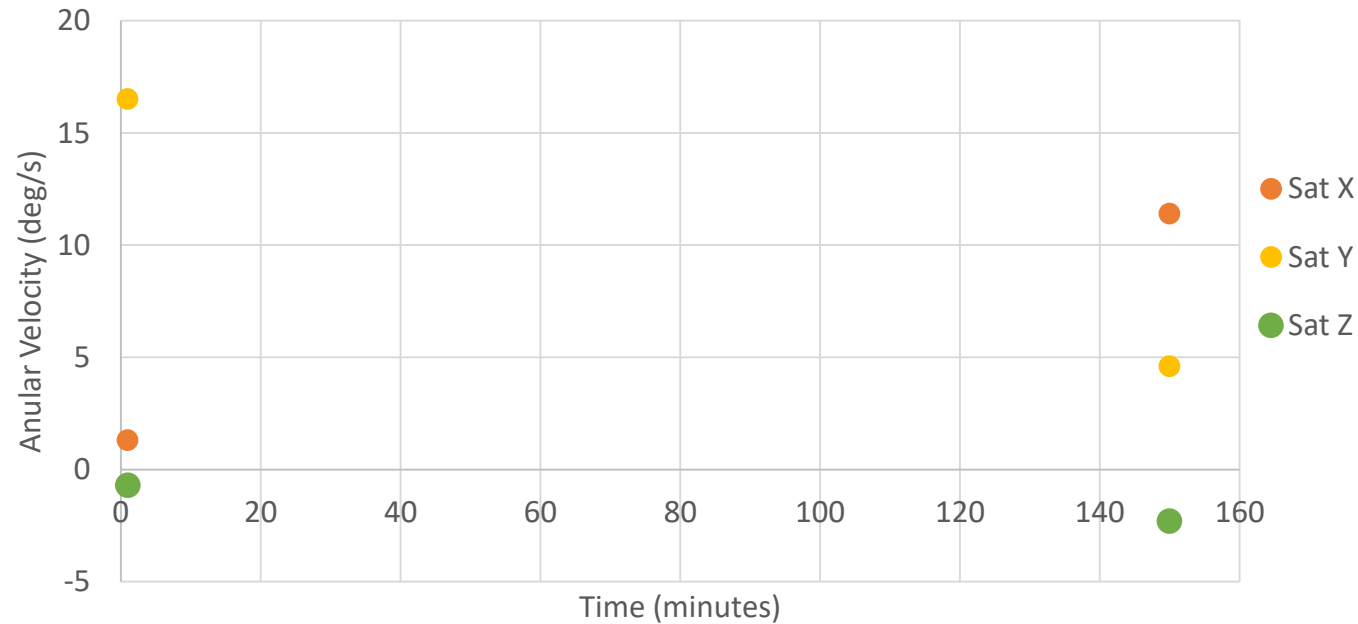
- According to the data we downloaded it shows MTQ performed some work.
- Because the angular velocity of each axis changed after the mission
- This is the data from UGUI SU .
- This shows what we could analyze using this data.

In the beginning of the mission			At the end of the mission		
Sat X (Sensor Z) dps	Sat Y (Sensor X) dps	Sat Z (Sensor Y) dps	Sat X (Sensor Z) dps	Sat Y (Sensor X) dps	Sat Z (Sensor Y) dps
1.3	16.5	-0.7	11.4	4.6	-2.3

Assumptions Made While Analyzing Data

- There are three factors ,
 1. Residual Magnetic Field neglected.
 2. Disturbance torque from the environment neglected.
 3. Gyroscope sensor values were trusted.

MTQ Performance During the Mission

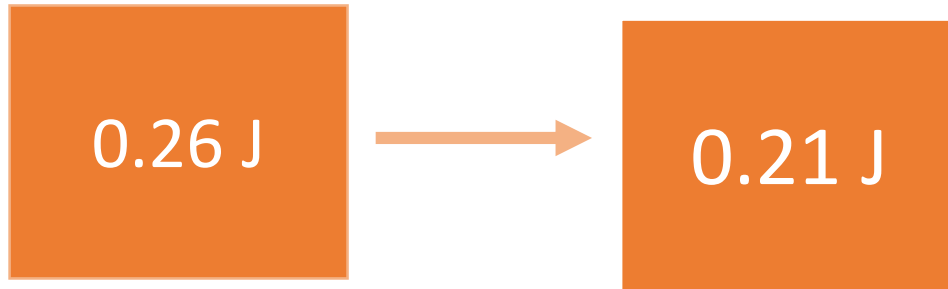


Graph which shows the angular velocity difference in the beginning of the mission and the end of the mission.

The graph is plotted in “dots” because we do not have continuous data. We have only beginning and the end packets.

Kinetic Energy Difference

Kinetic energy of the satellite has decreased after 150 minutes execution.



We downloaded ADCS mission data of 150 minutes execution. This analysis is done by first 50 packets and the last 50 packets .

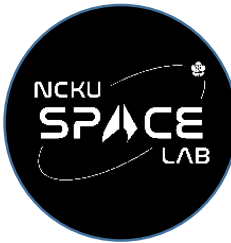
Conclusion

According to the mission data downloaded and with the assumptions we made,

It shows that the kinetic energy is decreased at the end of the mission.

END OF THIS SECTION

33. BIRDS-3: Satellite operation report from Taiwan



Due to the COVID-19 pandemic, we are supporting Kyutech for the satellite operations from Taiwan. This is the first time we are downloading image from the ground station of NCKU (National Cheng Kung University) in Taiwan. We are glad that our ground station is working well with BIRDS-3 satellites and expect that we can get the complete image of Taiwan next time!

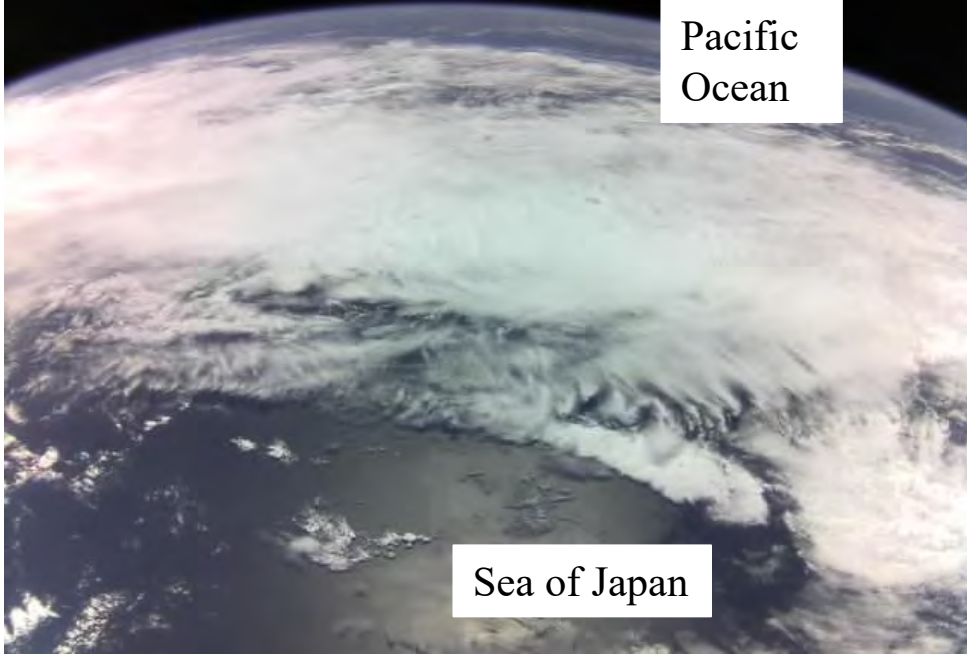


This article was submitted to this newsletter on 14 May 2020 by Mr. Hsu of Taiwan.

Ke-Yen Hsu,
Master student of EE of NCKU, who is supporting operations from ground station in Taiwan now

Images downloaded from the NCKU ground station

Image from NepaliSat-1



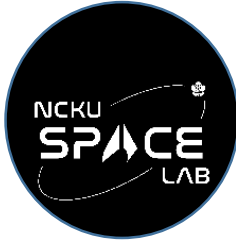
Pacific Ocean

Sea of Japan

Image from Raavana-1



Because of the heavy cloud cover in the most of region, we can not identify exactly where the area is. However, according to the time when the image was taken and after the analysis of software “Orbitron”, we can make sure that both areas are nearby Japan.



END OF THIS SECTION



BIRDS-3: Outreach Program During COVID-19 Quarantine

Hari Ram SHRESTHA

BIRDS-3, Nepal

14 MAY, 2020

Activities: During the State of Emergency in Japan

Written By : Hari Ram Shrestha

COVID-19 pandemic has globally affected the world. According to sources, many people have died and still many people are in the hospital for recovery. It has already damaged the economic sector of many countries in the world.

What should you do in a lockdown?

- # Watch movies, play games
- # Do some physical activity like yoga
- # Read (Book, Journal papers, News)
- # Attend the BIRDS (nanosatellite) outreach program through webinar and Facebook live
- # Cook something new food
- # Play with children



#learnwithkaicho

Live Learning

Journey to Space : Nepal's first satellite NepaliSat-1

Join the online session

April 30, Thursday
2 PM onwards

facebook.com/kaichogroup

Kyutech
Kyushu Institute of Technology

Kaicho Group

You can watch in here: [Click](#)



BIRDS Generation

BIRDS-1	BIRDS-2	BIRDS-3	BIRDS-4
<ul style="list-style-type: none">Ghana,Mongolia,BangladeshNigeriaJapan	<ul style="list-style-type: none">MalaysiaPhilippinesBhutan	<ul style="list-style-type: none">NepalSri LankaJapan	<ul style="list-style-type: none">(In Lab)PhilippinesParaguayJapan

I Shared the BIRDS-3's and Journey to space of Nepal's first Satellite NepaliSat-1 experienced to youth of the nation through Facebook LIVE in April 30, 2020.



Kaicho Group

April 27 at 1:17 PM · 🌐

You are invited to join our FB live session where Mr. Hari Ram Shrestha will be talking about the Journey of Nepal to Space and the very first satellite of Nepal: NepaliSat-1 also known as Bird NPL on Thursday, April 30.

Mr. Hari Ram is one of the two Nepalese scientists studying at the Japanese 九州工業大学 Kyushu Institute of Technology (KyuTech) who developed NepaliSat-1. He is also the Chief Technical Assistance at Faculty of Technology, Nepal Academy Of Science And Technology...

See More

Edit

52

4 Comments 91 Shares

Like Comment Share

From Kaicho Group Facebook page



Outreach: BIRDS CubeSat Project

Written By: Hari Ram Shrestha

In my presentation at the online space workshop 2020, I basically presented about the BIRDS CubeSat EPS standard design and its verification method according to safety requirements of JEM Payload Accommodation Handbook for JAXA. I also shared my experienced about the work culture in Cho Lab and difference between the Nepal's and Japan's working style.

Basics of Camera Design for Low Earth Orbit (LEO) Earth Observation

ONLINE SPACE WORKSHOP 2020
#OSW2020
2 MAY 2020 8 AM NPT

Abhas Maskey
Project Manager
BIRDS-3 Satellite Project

LIVE ON YouTube

Link: [Abhas's Presentation](#)

Design and Verification Test of Electrical Power Subsystem (EPS) of BIRDS-3 and BIRDS-4 CubeSat

ONLINE SPACE WORKSHOP 2020
#OSW2020
2 MAY 2020 9 AM NPT

Hari Ram Shrestha
Team Member, NEPALISAT-1

LIVE ON YouTube

Link: [My Presentation](#)

Abhas introduced the BIRDS Project, Kitsune Project. His focus was on imaging and camera design for low earth orbit and its verification system with results of BIRDS-3 Nanosatellite.

ONLINE SPACE WORKSHOP

COMING SOON

AMSAT NEPAL ORION SPACE

Invitation and design of OSW 2020

Online Space Workshop 2020				
Speakers	Day	Time	Topic of Presentation	Designation
Mr. Abhas Maskey	2nd May	8:00 AM NPT (4:15 AM CET)	Basics of Camera Design for Low Earth Orbit (LEO) Earth Observation	Project Manager for BIRDS-3 Satellite Project
Mr. Hari Ram Shrestha	2nd May	9:00 AM NPT (5:15 AM CET)	Design and verification test of Electrical Power subsystem (EPS) of BIRDS-3 & BIRDS-4 CubeSat Projects	Team Member of NepalSat-1
Mr. Felix Paez Pavon	2nd May	6:00 PM NPT (2:15 PM CET)	AMSAT EA PocketCube Missions and Designs	President at AMSAT Spain (AMSAT EA)
Mr. Tom Walkinshaw	2nd May	7:00 PM NPT (3:15 PM CET)	Getting Pocketcubes on Orbit, cheaply, regularly and reliably	Founder and CEO of Albe Orbital
Mr. Pravin Raj Joshi	3rd May	8:00 AM NPT (4:15 AM CET)	History and Relevance of Ham Radio in Nepal	Director at Brihaspati Vidyasadan and Member at AMSAT Nepal
Dr. Rajendra Adhikari	3rd May	9:00 AM NPT (5:15 AM CET)	Simulation of space vehicles and orbital trajectory using Supercomputer	Asst. Professor at Kathmandu University and President at AMSAT Nepal
Mr. Julian Fernandez	3rd May	7:00 PM NPT (3:15 PM CET)	FOSSASAT-1, Data from the first IOT Picosatellites in Space	CEO/Co-Founder of Fossa Systems

Me (Hari) and Abhas would like to appreciate to AMSAT Nepal and ORION space Nepal to organized for Online Space Workshop 2020.



Outreach:NepaliSat-1 and BIRDS CubeSat Project

Written By: Hari Ram Shrestha

f t v y
गुण्डा, बैशाख २६, २०७० / May 08, 2020

NepalNews.
NEPAL'S FIRST ONLINE NEWS PORTAL

विज्ञान-प्रविधि

नेपालको झन्डाअंकित स्याटेलाइट अन्तरिक्ष पुग्दा खुसीको त्यो क्षण

हरिराम श्रेष्ठ | वैशाख २६, २०७० | गुण्डा | काठमाडौं



नेपाल विज्ञान तथा प्रविधि प्रतिष्ठान (नास्ट)का हरिराम श्रेष्ठ क्युटेक विश्वविद्यालयमा स्पेस इन्जिनियरिङमा मास्टर्स गरिरहेका छन्। उनले नेपालकै आभास मास्के नेतृत्वको टिमसँग बर्ड्स-३ प्रोजेक्टमा काम गरिसकेका छन्। यही प्रोजेक्टबाट गत वर्ष नेपालले पहिलो नानो स्याटेलाइट निर्माण गरी प्रक्षेपणसमेत भइसकेको छ। अहिले बर्ड्स-४ प्रोजेक्टमा काम गरिरहेको श्रेष्ठले नेपाल आएका बेला नेपालन्युजसँग आफ्ना अनुभव यसरी बाँडे

क्युटेक विश्वविद्यालयमा अध्ययन-अनुसन्धान

म जापानको क्युटेक विश्वविद्यालयमा मास्टर्स डिग्रीका लागि नास्टबाट छानिएर गएको हुँ। एसइआइसि अर्थात स्पेस इन्जिनियरिङ इन्टरनेसनल कोर्स अन्तर्गतको प्रोजेक्टमध्ये बर्ड्स प्रोजेक्टमा काम गरिरहेको छु। यसैअन्तर्गत नेपालकै पहिलो स्याटेलाइटको सफल परीक्षण पनि गभ्यौं। अहिले हामी स्याटेलाइट परिचालन गर्ने क्रममा छौं। काम राम्रै भइरहेको छ। डाटाहरु लिनेदिने काम भइरहेको छ।

I explained about the BIRDS Project in Kyushu Institute of Technology and its available facilities for Space Program



snapshots of all photos are from the video.

Video Link: [Outreach](#) Acknowledge: Multimedia team/NAST

Nepal News started to published for peoples to as the title" Good News Reading Interview" during the lockdown in Nepal by COVID -19.They have covered overall the BIRDS project and member's experienced.

Acknowledge: Chatra Kakri sir/Nepal News.

f t v y
गुण्डा, बैशाख २६, २०७० / May 08, 2020

NepalNews.
NEPAL'S FIRST ONLINE NEWS PORTAL

अन्तर्वार्ता

This paragraph introduces Abhas Maskey

नेपाल फर्किएर स्याटलाइट प्रोजेक्टमै काम गर्ने सोच छ : आभास मास्के

नेपालन्युज | वैशाख २६, २०७० | काठमाडौं



इन्जिनियर आभास मास्केले जापानको किताक्युशुस्थित क्युटेक युनिभर्सिटीमा स्पेस इन्जिनियरिङमा पिएचडी गर्दै छन्।

एक वर्षअघि प्रक्षेपण गरिएको नेपालको पहिलो नानोस्याटलाइट नेपालीस्याट-१ निर्माण गर्ने टिमका म्यानेजर हुनु उनी। बर्ड्स-३ प्रोजेक्टअन्तर्गत उक्त स्याटलाइट निर्माणका लागि नेपाली इन्जिनियर हरिराम श्रेष्ठसहित श्रीलंका, जापानका विद्यार्थी पनि टिममा रहेका थिए।

नेपाली नानोस्याटलाइट प्रक्षेपण गरिएको एक वर्ष पुगेको अवसरमा मास्केसँग नेपालन्युजले गरेको कुराकानीको सम्पादित अंश

नेपालले पहिलो स्याटलाइट स्पेसमा पठाएको एक वर्ष पुगेको छ, यस बीचमा के-कस्ता काम भए?

END OF THIS SECTION



HOME COOKING

By
Dulani
13 May 2020

#familycooking #family #yummy #Srilanka





In our garden we have most of the vegetables. The first picture shows plucking an eggplant. The second picture shows the vegetables we could pluck in a day. The second picture includes ladies fingers, red yard long beans, eggplants and wild egg plant (we call it *Thibbatu*). Third picture also shows egg plant and *kakiri* (*kakiri* is similar to cucumber). So most of the times we cook fresh vegetables from the garden.



Normally we always have green leaves in our meals. The first picture shows some green leaves (called *Thampala*) which is plucked from our garden. The ingredients added were shown in the second picture. Third picture shows an amazing curry of green leaves.



My mother cooking one of my favorites. This is made of jack seeds and red yard long beans. These red yard long beans are from our garden. The next picture shows how the end product looks like.



My sister made this evening snack.



This was a nice evening enjoying the snack my sister made while having a cup of tea.



← This a Sri Lankan traditional food called Pol (Coconut) roti. This is made of coconut and flour. We had this for a dinner. Normally Sri Lankans have this for breakfast as well.

YUMMY!

©PubliStock.com • 111190420



This a Sri Lankan food called *hoppers*. We normally eat this with *seeni sambol* (which is in the right of the picture, made of onion). Normally we have this for breakfast or dinner.



My mother preparing to make coconut roti. A picture of home made coconut roti is shown in previous page.



While my sister was cooking.



This is Sri Lankan pancake. There is a special filling inside. That is coconut jaggery filling.



This food is called Kottu. This is one of my favorites. Normally we have this for dinner.



This photo inserted by the editor →

<https://www.ttrweekly.com/site/wp-content/uploads/2019/07/Sri-Lanka.jpg>

36. Momentum to launch IRIS-A satellite of Taiwan

Home > NewSpace > Momentum to launch Taiwan's IRIS-A satellite

News NewSpace Satellites

Momentum to launch Taiwan's IRIS-A satellite

By Deyana Goh - April 3, 2020



Momentum, which is developing the Vigoride orbital transfer vehicle which uses water plasma thrusters, has signed an agreement with Taiwan's National Cheng Kung University (NCKU) and Odysseus Space for the upcoming IRIS-A mission. In the agreement, Momentum's Vigoride will take IRIS-A to its final orbit.

IRIS-A will be the first of three satellites in Taiwan's IRIS series, followed by IRIS-B and IRIS-C. IRIS-A will be equipped with **Internet of Things** (IoT) technologies to achieve a Doppler shift estimation and improve the quality of downlink signal, increasing the efficiency of future IoT constellations of nanosatellites intended to monitor objects from space.

THE REST OF THIS TEXT IS HERE: <https://www.spacetechnology.com/momentus-to-launch-taiwans-iris-a-satellite/>



Prof. Jyh-Ching Juang, National Cheng Kung Univ. (NCKU), is a member of the BIRDS Network

FROM: <https://www.elonx.net/spacex-smallsat-rideshare-missions/>

LOG as of 18 May 2020

- May 15, 2020 – Momentus will carry Alba Cluster 3 on the first dedicated mission in December
- May 14, 2020 – Umbra SAR-2001 will launch on the first dedicated mission; Momentus Vigoride will carry a Sen EarthTV satellite in the summer of 2020 and then four more in 2022
- May 13, 2020 – SkySats 16–18 will launch on Starlink v1-8 and SkySats 19–21 this summer
- May 12, 2020 – SpaceX’s first dedicated smallsat mission is planned for December 16, 2020 and will also launch the XR-1 satellite
- May 7, 2020 – NASA’s PTD-1 satellite will launch on a SpaceX rideshare mission in December 2020
- Apr 22, 2020 – Momentus Vigoride will carry 12 SpaceBee satellites in Dec 2020 and additional ones in 2021 and 2022
- Apr 19, 2020 – SkySats 16–18 will probably launch on some later Starlink mission, not v1-6
- Apr 14, 2020 – Exolaunch added to the December 2020 SSO launch; SAOCOM 1B delayed from March
- **Apr 2, 2020 – IRIS-A added to the Feb 2021 shared launch**
- Mar 20, 2020 – VZLUSAT-2 will launch in December instead of CScube
- Mar 9, 2020 – Added several new Momentus Vigoride and two new payloads (CScube and RADCUBE)
- Feb 8, 2020 – Added NuX-1 satellite; NanoRacks payloads will launch on the first dedicated mission



See this pdf for more info on IRIS

https://unisec-global.org/pdf/uniglo7/day4/2_student_representatives/12_taiwan.pdf

37. Futaba student CubeSat project concludes fund-raising phase

九工大から宇宙へ！超小型人工衛星「ふたば」！！



衛星開発プロジェクト 代表 大谷 将寿

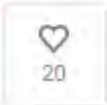


寄附総額 **RAISED AMOUNT**
2,024,000円 目標金額 1,000,000円

寄附者 募集終了日
167人 2019年11月21日



プロジェクトは成立しました！



This student satellite project was originally mentioned in Issue No. 46 of the **BIRDS Project Newsletter** on pages 78-80; please check it out.

https://readyfor.jp/projects/kyutech-futaba/accomplish_report



九州工業大学
衛星開発プロジェクト
クラウドファンディング終了

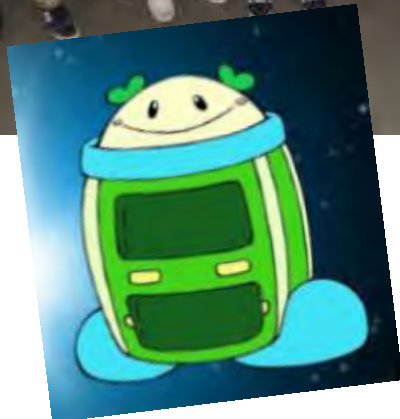
Project concludes crowdfunding fund-raising
(enough was raised)

ご支援いただいた皆様。この度は、九州工業大学 衛星開発プロジェクトへのご支援ありがとうございます。本プロジェクトは学部生が主体となって開発・試験・運営を行っている、国内でも数少ない学生により衛星開発を行っている団体です。今回のご支援により、打ち上げ費用を確保することができました。皆様のお気持ちに応えるためにも、私たちの手で開発した超小型人工衛星「ふたば」を必ず宇宙へ届けたいと思います。

打ち上げの日まで温かく見守っていただけると嬉しいです。

--衛星開発プロジェクト 代表 大谷 将壽

https://readyfor.jp/projects/kyutech-futaba/accomplish_report



Dr. Masui

End of this **BIRDS Project Newsletter**

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This newsletter is archived at the BIRDS Project website:

<http://birds1.birds-project.com/newsletter.html>

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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.

