

Members of BIRDS-1 Team and BIRDS-2 Team -- 16 May 2017, at Tobata Campus Note the mock-up being held by Antara in the front row.

Project website: http://birds.ele.kyutech.ac.jp/

All back issues are archived at this website.

BIRDS Project Newsletter

Issue No. 19 (25 August 2017)

Edited by:

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At the top, click on the tab called NEWSLETTER. You will get a menu for all back issues.

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The Guest Box



BRAC ONNESHA & HORYU-4 data are being analyzed by spectrum analyzer provided by BTRC (Bangladesh Telecommunication Regulatory Commission).

- from Bangladesh



01. BIRDS-1 of Nigeria ("EduSat-1") is described in The Nigerian Tribune

This article appeared in *The Nigerian* Tribune on 29 June 2017.

> To write it, the newspaper interviewed Ibukun (BIRDS-1, Nigeria) via the Internet



education

'FUTA's Edusat-1 will promote satellite technology and space careers among children, youths'

The Federal University of Technology, Akure (FUTA) recently announced its presence in the space technology by emerging as the first university in Nigeria to build and launch a satellite into space. The historic launch took place at the Kennedy Space Centre, Florida. United States. In this online interview from Japan, Mr Ibukun Adebolu, one of the members of the FUTA team that achieved the feat, discusses with LAOLU HAROLDS the mission, cost and benefits of the project.

JTA recently made history as the first Nigerian university to launch a satellite into space. Can you fill us in on the approximate time of the launch and how it went?

On Saturday June 3, 2017, 10.07 GMT+1 NigeriaEduSat-1, along with four other satellites of the BIRDS constellation were launched to the International Space Station (ISS) as part of cargo on a Space X dragon spacecraft on its 11th Commercial Resupply Services (CRS-11) mission. NigeriaEduSat-1 is Nigeria's first nanosatellite and developed by FUTA, with the help of the National Space Research and Development Agency (NASRDA), and is expected to be fully operational by the end of July,

It's gratifying that, at last, a university of technology in



How was this project conceptualized? Whose idea was it, and why was a satellite deemed a priority by the university and your team at this

пушк ш зрасе: таш парру-

I got to know about the project through FUTA's Center for Space Research and Applications (CESRA) in 2015. I believe FUTA, through CESRA, developed a memorandum of understanding (MOU) with Japan's Kyushu Institute of Technology with the help of Mr Tejumola Taiwo, who was at the time a Master's (degree) student in Japan and now the BIRDS project manager.

Focusing on developing space capabilities is a step in the right

ies had their launched into CubeSats space on SpaceX Falcong Rocket. Apart from Japan, whose Kyushu Institute of Technology worked with FUTA, did you work with the other nations too, or was it just a matter of convenience or coincidence that they are also doing this same project at this same time?

It's not a coincidence. The BIRDS project is a constellation of five identical nanosatellites. A constellation is a group of satellites that perform similar missions in a coordinated manner, utilizing the advantage of several satellites to obtain extended and continuous coverage. The five satellites of the BIRDS constellation belong to Japan, Ghana, Mongolia, Nigeria

and Bangladesh - participating countries in the BIRDS 1 Project. The aim of the BIRDS project is to promote satellite development technology transfer to non-space foring nations through hands-on projects. Bhutan, Malaysia and Philippines are participating in the second phase (BIRDS 2 Project), and there are plans underway to commence a third phase (BIRDS 3 Project) in October, 2017. A total of 15 students, including me, worked on developing the satellites. Since the five satellites are identical, it will be correct to say I worked on

We understand the satellite was designed and built 100 percent by FUTA. How long have you been on the project?

I joined the project when it kicked off in October, 2015. Two other Nigerians, staff of NASRDA. also worked on the project from the beginning.

How much of the materials used was sourced locally or otherwise?

On this phase of the project, no material was sourced locally. I believe NASRDA has plans to continue to partner with FUTA and other Nigerian institutions to develop a made-in-Nigeria satellite in the near future.

Do you want to give us an idea how much the project has gulped, and how it was sourced, especially now that federal institutions are groaning from lack of funds?

Development costs and launch costs are about 100,000 US dollars. I believe a substantial part of this money was provided by the National Space Research and Development Agency (NASRDA) as part of its oversight and supervisory functions in the promotion of local capabilities for space development. There may be other costs incurred, but I do not have information about that at this moment.

Can you give us an idea of the size/span/weight etc of the sat-

NigeriaEduSat-1 is a nano-satellite of the rU form factor. It has an approximate weight of 1.1 kg and dimensions 100 nm (L) x 100 mm (W) x 113.5 mm (H)

What exactly is NigeriaEdusat-1 supposed to do up there, and what, in specific terms, will be the benefits to FUTA, and Nigeria as a coun-

NigeriaEduSat-t, along with the four other nanosatellites of the RIRDS constellation will perform three onboard missions. First, we aim to take low and high resolution pictures of each home country of the participating members of the constellation. Each satellite is equipped with a 0.3 megapixel camera as well as a 5 mega pixel camera. We hope to capture distinct features of each target country, including borderline images, major rivers etc. The secand mission on board each satellite is aimed at space education and outreach. Popular songs and poems are converted into digital format and uplinked to the satellite. The satellite stores the uplink file, reassembles it through an onboard digi-singer synthesizer and retransmits the file as an audio file that can be received on ground by amateur radio operators. This mission is aimed at promoting interest in satellite technology and space careers among children and youths, who can participate by coding the songs to be re-transmitted during major outreach events. The third onboard mission has a scientific nature. It involves the measuperient of atmospheric density in the region 400 km above earth. This mission is important because it utilizes the advantage of multiple satellites collecting data simultaneously at different points in the region, enhancing the body of scientific literature already available. The effects of atmospheric drag on the satellite is computed and used to determine the density at points of interest in the region and also used in further calculations to determine each satellite position in orbit without using a GPS. Apart from the three on-orbit missions, there are also three ground based

02. Day 1 of the BIRDS-2 CDR (the next few pages)

Initial discussions between Kyutech (led by Prof Cho, standing at the screen) and the delegation from Bhutan (led by Ambassador Dorji, indicated by the red dot).

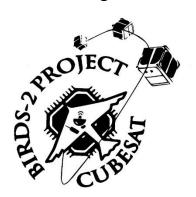
Members of the delegation from Bhutan (key members of Bhutan's "Satellite Working Group") are as follows:

- Mr. Tshewang C. Dorji
- Mr. Jigme Thinlye Namgyal
- Mr. Karma Yonten
- Mr. Sonam Phuntsho
- Mr. Pema Rinzing Rinchen

In the foreground is Prof Yamaguchi, Vice President of International Affairs, with the light-colored shirt.



The "Control Room" of LaSEINE on the 4th floor of the General Research Building of Tobata Campus.









Exchanging of business cards 名刺の交換







Kyutech President (Prof. Oie, in the yellow frame below) welcomes the guests from Malaysia (7 persons), Bhutan (5 persons), and the Philippines (4 persons).



The initial meeting of BIRDS-2 delegates





President Oie and Prof. Cho



A few words from the Bhutan delegation



A few words from the Malaysian delegation



A few words from the UPD delegation



The UPD (Univ. of the Philippines Diliman) Team



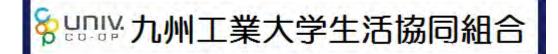
A few words from the PI of the BIRDS Project







Having lunch with the BIRDS-2 students and visiting UiTM students at Sei Kyou (student cafeteria) – immediately before the CDR proper.













Print outs of the presentations





















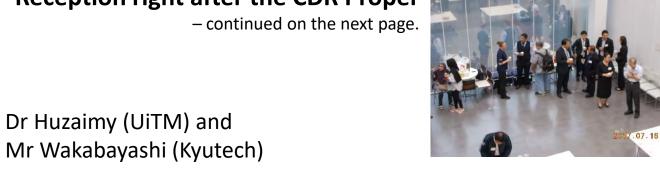
Group Photo at Nakamura Memorial Hall after CDR Proper but before the reception

(photo by Dr. Kim, Kyutech)





Reception right after the CDR Proper







Some members of the Malaysia team



Some members of the Philippines team













Above: Prof Yamaguchi (VP of International Affairs, Kyutech) with the entire Bhutan delegation.

Below: Student Cheki (Bhutan) with Prof Yamaguchi.



Warm speeches at the end of the reception



Above: Student Yamaguchi.

Below: The students line up – each said something.





Prof. Joel Marciano, representing UPD and DOST, Philippines



Mr. Jigme Thinlye Namgyal the Director General of Ministry of Information & Communications (MoIC), Royal Government of Bhutan



Assoc. Prof. Ir. Dr Mohamad Huzaimy Jusoh, Head of First UiTM Nanosatellite Project, Malaysia





Group Photo after the reception

Kyutech's Nakamura Memorial Hall



A report: Day 2 of the BIRDS-2 CDR

This report was created by Yeshey of Bhutan on 21 August 2017.

Day 2 occurred on 19 July 2017.

This report covers the following events:

- PANEL DISCUSSION 1
- PANEL DISCUSSION 2
- PANEL DISCUSSION 3
- PANEL DISCUSSION 4
- KYUTECH FACILITY TOUR
- OFFICIAL LAUNCH OF BIRDS-2 WEBSITE AND SOCIAL MEDIA PAGES
- CERTIFICATE AWARDING CEREMONY



PANEL DISCUSSION 1

Ideas for Promotional and Outreach Activities in Home Countries

Moderator: Yeshey

Participants took part in a group exercise to brainstorm ideas for promotional and outreach activities in home countries, followed by brief presentation of ideas to the audience



Participants in discussion



PANEL DISCUSSION 2

Development and Deployment of Magnetic Field Measurement Sensors

Moderator: Syazana

Malaysian team proposed to collaborate in measuring the geomagnetic field in participating countries by installing magnetic field measurement sensors



Dr. Huzaimy (above) and Ms. Amirah (left) from UiTM, Malaysia, presenting about magnetic field measurement in participating countries.



PANEL DISCUSSION 3

Development and Deployment of Ground Sensor Terminals for BIRDS-2 Nanosatellite S&F Remote Data Collection System

Moderator: Adrian

A module developed in collaboration with UPD, Philippines, was presented to execute the Store & Forward mission



Adrian (right) presented about the module and its functionality as well as estimated costs.

Ms. Amirah (left) from UiTM, Malaysia presented about using data collected by magnetic field sensors in remote areas to demonstrate the Store & Forward mission



PANEL DISCUSSION 4

Ideas on Capacity-Building and Educational Activities in Home Countries for Sustainability of Small Satellite Development

Moderator: Kiran

Experience and current developments of UPD and PEDRO, Philippines was shared with the participants in terms of capacity building and infrastructure development



Dr. Marc Talampas shared updates on PHL-Microsat (Diwata) program, developments on Diwata-1 and Diwata-2, space-related activities in UPD, the establishment of a microsatellite research laboratory and future plans and prospects



Mr. Alvin Retamar of the DOST Advanced Science and Technology Institute (ASTI) shared developments on the Philippine Earth Data Resource and Observation Center (PEDRO)



KYUTECH FACILITY TOUR





Tour of Ground Station at Kyutech

Group photo at LaSEINE

The participants visited the Laboratory of Spacecraft Engineering and Interaction Engineering, Center for Nanosatellite Testing, and the BIRDS-2 working lab during the facility tour.



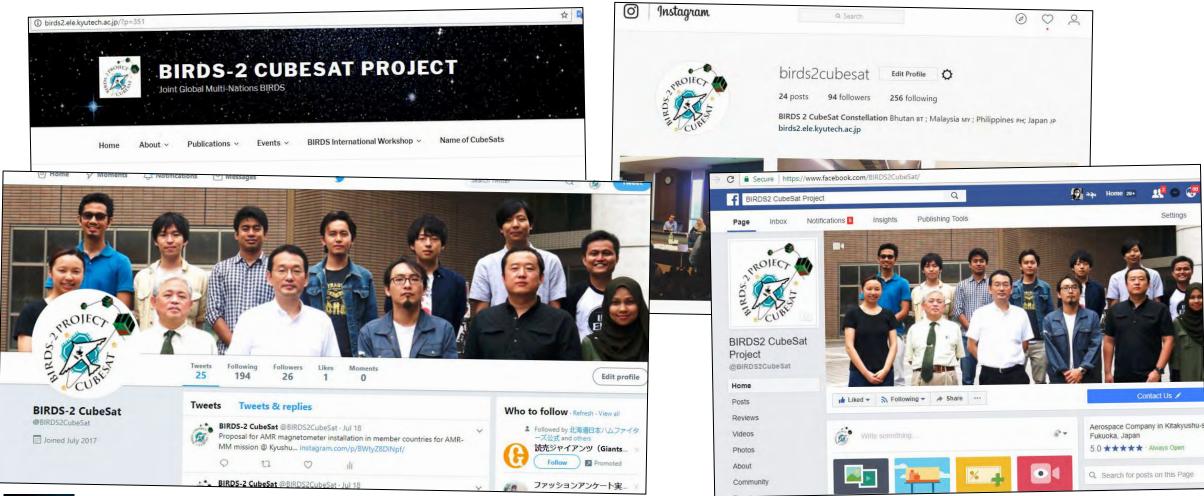
Tour of BIRDS-2 working lab

Tour of CeNT facilities



Follow, like, share!!!

OFFICIAL LAUNCH OF BIRDS-2 WEBSITE AND SOCIAL MEDIA PAGES





CERTIFICATE AWARDING CEREMONY



← Dr. Pauline Faure (examiner) awarding the certificate for BEST performance in solar cell assembly practice to Azami of Malaysia.

The other members were awarded certificates for satisfactory performance.

THE END OF THE "DAY 2" REPORT BY YESHEY OF BHUTAN.



04. The departure of the UiTM delegation



The entire Malaysian delegation departs
Kyutech from the JR station of Kyutech (九州
工大前) on 19 July 2017.

Dr Huzaimy (the blue shirt), BIRDS-2 students (Azami and Syazana), and the visitors from UiTM.

Chance photo by G. Maeda, who was going in the opposite direction to them.





05. The visit to Kyutech by UiTM is written up at the website of UiTM

Siti Nadhirah Mohamad Rahim News @FKE

https://fke.uitm.edu.my/v5x/index.php/news-events/372-academic-visit-to-kyutech-tobata-campus-japan-18-21-july-2017



Academic Visit to KyuTech, Tobata Campus, Japan

Created: 25 July 2017

From the UiTM website on 9th August 2017.

Kyushu Institute of Technology, is known Nano-Satellite academic program for graduate students. In 2016, two (2) graduate students were involved in the Nano-Sat program named BIRDS-2 BIRDS-2 is project between collaboration developing countries (the





Philippine and Bhutan) and this collaboration is the first Nano-Sat project for UITM.

Cont'd next page



The main purpose of this visit is the Critical Design Review (CDR) meeting; an important reviewing aspect before project finalization. Both UiTM students, Mrs Syazana Basyirah Mohammad Zaki and Mr Muhammad Hasif Azami successfully presented their parts on the BIRDS-2 project. Mr Hasif was awarded "The Best Sample in Solar Cell Assembly Practice".

The Malaysian delegation consist of Assoc Prof Ir Dr Mohamad Huzaimy Jusoh as the leader of the project and Head of Communication Department, Dr Mohamad Fahmi Hussin @ Mohamad. On July 18th, representative from BIRDS-2 countries, including Japan, Bhutan, Philippines and Malaysia were welcomed by Kyutech President, Yuji Oie-san in a ceremony. The ceremony was closed with brief introduction from all representatives. In the afternoon, the main program CDR started and many constructive questions and comments were expressed from all participants. The next morning, participants were put together and brainstormed for potential outreach proposal to create awareness about the space technology. Continuing the momentum, Assoc Prof Ir Dr Mohamad Huzaimy presented a proposition for fully utilizing the BIRDS-2 Missions. Furthermore, two (2) FKE undergraduate students, presented specialized project related to BIRDS-2 mission. Ms Nor Maizatol Amirah Mohammed Azuan articulately presented on "AMR-MM Coupling for Space and Ground Station", followed with presentation by Ms Nur Amirah Azahari on "Store and Forward Mission". The session continued with presentation from Philippines representatives.

In conclusion, this short trip brings forward UITM vision to elevate the academic program offered to students and develop reliable human capital for Malaysia. Our BIRDS-2 graduate students will continue on finalizing their AMR MM mission, deploy-able antenna subsystem and CAM Mission alongside with other team members. Always soaring upwards!!

End of this article



06. Check out this popular beer joint the next time you visit Kitakyushu

Mojiko Local Beer Brewery

地ビール -- microbrew, or local beer

[This info is from JETRO]

"Mojiko Local Beer is one of the microbrew in Kitakyushu city. We use German Malts and Yeast, German Hops, Czech Hops, and American Hops to make our original blended fruity beer.

There are two restaurants on the 1st floor and the 3rd floor, where you can have a local beer and pot baked pizza, and you can also enjoy the Mojiko night view. If You are a visitor and interested in the brewery, you can have a look at the brewery from the 1st floor."



Website: http://mojibeer.ntf.ne.jp/ (Japanese only)

Category: Food, agricultural and fishery products

Region: Kyushu





Mojiko Local Beer Brewery

Higashi-Minato-machi 6-9, Moji-ku, Kitakyushu-city, Fukuoka 801-0853 Japan About 5-minute walk from JR Mojiko Station.

Please get off the train, walk straight and pass through the Mojiko Hotel.



For more info: https://www.jetro.go.jp/en/ind_tourism/mojiko_local_beer_brewery.html





Dr Werner Balogh receives this certificate of appreciation from G. Maeda (Kyutech) during the *INSPIRE Workshop* in Boulder, Colorado, USA, 1-3 August 2017. It is signed by the 15 students of the BIRDS-1 Project.

Workshop website: http://inspiresat.com/workshop/

07. Dr. Werner Balogh receives BIRDS-1 Certificate of Appreciation during INSPIRE



Certificate of Appreciation

The students of the BIRDS-1 Project present this certificate to Dr. Werner Balogh

(United Nations Office for Outer Space Affairs)

for contributing significantly to our space engineering education here at the Kyushu Institute
Technology during the course of the BIRDS-1 Project. We are deeply grateful.

16 July 2017





08. Steps were taken to register BIRDS-1 names with NORAD

BIRDS-1 satellites names registered with NORAD



North American Aerospace Defense Command is a combined organization of the United Sates and Canada that provides aerospace warning, air sovereignty, and protection for <u>Northern America</u>. Headquarters for NORAD and the NORAD/<u>United States Northern Command</u> (USNORTHCOM) center are located at <u>Peterson Air Force Base</u> in El Paso County, near <u>Colorado Springs</u>, <u>Colorado</u>.

Source: https://en.wikipedia.org/wiki/North_American_Aerospace_Defense_Command

This article has 2 pages: This page and the next page. This article was submitted to the BIRDS Project Newsletter on 15 August 2017 by **Taiwo**, who is the Project Manager of BIRDS-1.



The steps we followed

1

Dr. T. S. Kelso from Celestrak published that NORAD has assigned identification No to BIRDS were tracked



2

- BIRDS Team used available TLE for tracking
- BIRDS satellites have unique NORAD numbers
 https://www.celestrak.com/NORAD/elements/cubes
 at.txt

3

- BIRDS Team Identified all satellites after tracking for more than 30 days
- BIRDS Team requested for proper naming of all BIRDS satellites
- Email sent to Dr. T.S. Kelso (TS.Kelso@celestrak.com)

4

 All BIRDS Satellites names appear on all tracking websites for tracking

> 1 42820U 98067MU 17216.37302621 .00011735 00000-0 17577-3 0 2 42820 51.6390 157.9192 0004322 69.6709 290.4747 15.55425029 4357 GHANASAT-1 1 42821U 98067MV 17216.88773257 .00013777 9990 20531-3 0 2 42821 51.6392 155.3568 0004348 73.5088 286.6381 15.55394528 4430 MAZAALAI (NUMSAT-1) 1 42822U 98067MW 17216.88821093 .00014894 22152-3 0 9995 2 42822 51.6393 155.3602 0004370 75.4643 284.6832 15.55373455 4439 BRAC ONNESHA 1 42823U 98067MX 17216.05376560 .00009350 00000-0 14207-3 0 9992 51.6392 159.5383 0007995 84.8086 275.3817 15.55303965 4284 NIGERIAEDUSAT-1 1 42824U 98067MY 17216.89002434 .00014144 00000-0 21136-3 0 9997 2 42824 51.6394 155.3735 0007823 88.8444 271.3443 15.55275464 4434

Japan_42820U- Toki Ghana_42821U- GHANASAT-1 Mongolia_42822U- MAZAALAI (NUMSAT-1) Bangladesh_42823U- BRAC ONNESHA Nigeria_ 42824U- NIGERIAEDUSAT-1



Scientists can now measure farm yields from space 21 Feb. 2017

ONDON (Reuters) — U.S. researchers have come up with a new method of estimating crop yields from small farms in Africa using high-resolution images from the latest generation of satellites — a development which could help cut hunger in poor parts of the world.

Improving agricultural productivity is one of the main ways to lift people out of poverty, but without accurate data it's difficult to identify the farmers who need help, scientists from Stanford University said.

Images from new, inexpensive satellites could be used to estimate yields and test interventions in poor regions where data is scarce, they said in a paper published in the Proceedings of the National Academy of Sciences on Feb. 13.

"Improving agricultural productivity is going to be one of the main ways to reduce hunger and improve livelihoods in poor parts of the world," said Marshall Burke, an assistant professor at Stanford's School of Earth, Energy & Environmental Sciences.

"But to improve agricultural productivity, we first have to measure it, and unfortunately this isn't done on most farms around the world," he said in a statement.

While Earth-observing satellites have been around for more than three decades, most of their images haven't been detailed enough to show the small agricultural fields common in developing countries.

But with satellites becoming cheaper and offering improved image resolution, it is now possible to capture very small areas, the researchers said.

David Lobell, an associate professor at the school, said in a video that satellites which were once the size of school buses were now the size of fridges or even shoeboxes.

"You can get lots of them up there, all capturing very small parts of the land surface at very high resolution," added Lobell, who coauthored the study.

"Any one satellite doesn't give you very much information, but the constellation of them actually means that you're covering most of the world at very high resolution and at very low cost.

"That's something we never really had even a few years ago."

09. A new age for remote sensing -- using nimble satellites



Photo credit: see the fine text below.

A game changer: Small satellites in constellation formation.

https://www.google.co.jp/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0ahUKEwil8Z-h_djVAhWMybwKHb3bCKkQjRwIBw&url=https%3A%2F%2Fwww.engineering.unsw.edu.au%2Fcivil-engineering%2Fremote-sensing-and-digital-mapping&psig=AFQjCNFdIft2L2LgH_7d9CkaODpk8LCE_w&ust=1502877514634820



10. Some BIRDS-1 articles that appeared in the press in Bangladesh this year

The next five pages show various newspaper articles that were published in Bangladesh (print media)

These clippings came from the BIRDS-1 Bangladesh team of Maisun, Antara, and Kafi.





দেশের প্রথম ন্যানো-স্যাটেলাইট উদ্ভাবকদের কথা

अस्टर्सी दशतक के

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রন তরুল ইতিনিয়ার কান জ্বানাত এক করে দিনত ধারেন বোলো যর কামকরন क्षार्थ, ४६न शास्त्र शास्त्र উপক্ষ হলে মতা খেশ, এটাই বো সাহাৰিক এমনটাই ঘটেয়ে সেপ্তে अध्य माहभा माहिता है। জ্ঞাক অস্থেষা'র উদ্বাহনের বেলারও। ব্রাক ইউনিচাসিলি সাদক ভদ্তাবধানে বাংলাদেশের তিন তক্ত কাফি, অনুৱা ও মান্তস্থ মিলে অবলেমে তৈনি कटाई (सन्दर्भ বাংলাদেশের প্রথম নালে স্মাটেলাইট, যা প্রথমবারের মত্রে এ দেশের জাতীয় সংগীত বুকে ধারণ করে ক্ষেত্ৰৰ কেন্দ্ৰাকৈ সমাপ্ৰকাল









रेडरिंड क्या गुण करा भारत प्रमुख के विनाम । यह प्राप्त निपम के हुएक , प्राराष्ट्र विनाम के क्रांस्ट होंगी प्रमुख करिय myempie Poe aprice street and

निर्देश करने काम कराई कर बराबा, क्षेत्र अलिक्की कि अब महिलान किया। दात्र किया मानि काम अलिकिन। each acted formance , when effects regime editations now him ल्का । एकाक दिवसिय संदानके किया । साम दलका त्यान, सामि क्षू गामाया महाराज्य विकृति किंग है अपन राज बाहरू अधिकार हम किसे, महन । सामाराहण स्थारन व विवाद प्रभा दक्षा हमूकि विद्य हमाराज्य वहाराज्य এমট ভালের কালে কাল কেশের বান্য সংস্কৃতিক সহস্যালৈর সামে বিলেখিলে selfs. Signs Stroughest, many letter wherein

त्वन तक अधिकादात सुक्षेत्रियान महता. या त्वरक श्रावा गत करवर राजि तरात्र मोद्रास रूपर (१९६५ नः) वरने द्वाराष्ट्र सूच्या (१८० गाँची ग । माम्बा मार्टीमार्डी निर्माण १०० ४६०। वर्ष ४६० वर्ष ४६० वर्ष ४५० वर्ष

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कर्तृतिकी स्थाप विक अन्या मातून कार शहर किये । व्यक्ति व्यक्ति লালের মনুরাল করে বর্তীর পরিস্থার বার আলামানর সময়র। মারারণ "বর্মার অনুরাঠ কাম্যা করার বার মার মা, বনু এটুর বর্মার পরি, মারার্মার

पार पार्टीनांदेरे स्थाने अंतर गाह प्राप्ता नेर्रिट्यांसाच, नाम गामाना off targons officers again affects on not select the second of accordance was not প্ৰকল্প ট্ৰিফ জন্ম, 'ছাতে কৰু নহয় কেটা ডিক মান, কৰু একতাত । মানুলৈটি, তথ্য আমান ভিতৰত বিশ্বকাৰ লগতে পাছিলি। ইশ কাম the contraction are noted to also very all and it noted the first wife; and a significant and other significant

no first over several transaction of finance and finance from a MERCHANT LINES FROM THEM WERE RELIEVED FOR SAN SOME - RESIDENCE HAVE BY परिवर्ग क्षापूर्व स्थित शास, 'अप्रै चुनव शार अ नाइम्ब महाना त्रम् a fargite medich Cent file and incres men up beine glenen a per bein men un muntera अन्त्र भी कह नरात् पुर्नानमे प्रसंत्र अरु बहुत प्रहार्थ पुरेश्य पार्ट । पुर्ना कार कारण्यम निराई आहर प्राचन नामान्य मानव তিত হবী। প্ৰমিয়ে জানাৰ নাজে ভিত্ত আৰু আহুৰ। কাৰণ আন্তা নিয়ে লয়ে। সাম্যোলটোটোৰ ইয়ানক ভিন ভাৰণ – কাৰি আনতা ও আগুন ।

Daily Bonik Barta – Saturday; February 11, 2017





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Daily Ittefaq – Wednesday; February 22, 2017



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CANADADORNAL REPORT FOR STREET, STREET, SALT LANGE ALBERT

ध्यम् शाल



अभागन्त किन्द्रेष्ठ ने निर्देशिक्ष कर जिन्ह्यार्थन्त्र राज्यन कृष्ट्रीय रिम्पा क्षत्रका कार्यात (स्र्वं (अर्थ) सन्द्रश्च किन कार्य, शास्त्रारा तरन रनसर, सरम्पर नर्गर नर्गराज व क्षत्र : नर्गृक्षर

- ত অভ্যাতিক মহাকাৰ গাৰখনা (क्टम युक्त जटन भारत
- উৎক্রেপণ হবে মে মাসে

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खार माता राजा जाने (स्वयं) राजायान वहित्रक हरिकार वेद्रात एक न्याप्तात वर क्योंच प्रतिक तह कि क्वितेश मानव-वान्यज्ञे एका एक । जनकी हर करून तह या स्थानूनव क्री का नहर । क्षांक्रणाच्या करण विकास कुलकृतिक श्रीवय हैनंबर (नाएन गाएंनाईर) 'दाल करता' ह Su meer - elem permenten melb -- reast als

क्यान देव हे पुरादा । क्यान वार्यान मृतीक नया, समावन दादक बल्कास्ट्रांड व अवदि, नमें, क्यानट पर्ट शहरू एक कार मना, मूचाइ-जनाक-अनोकान्य नांपकारण particular of Report over their vice.

बेरद रुपात्रम तम पानद नीवा बेन्द्रस्य dies trais! and spen spain sets, or न्तिकारी स्थू अर प्रतिक प्रांतियी गार्क amicicia par truel ambifer minie CHOSEN MONTHS ICE ILA CARRIE DI MANAGE MON द्रानात्त्र । क्रियांक्रील द्राव्य प्राप्त वक् दर्भन ।

जार विश्वन्ताम (क्षत्र नाम का अस वर्धनाव) WITHER THES EMPROY WE CON-COMICS

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(4504) restina ment for fronde july al trees TENNIN DEPTH OF SHEET COST OF STREET, STATE CONTRACTORS ARREST the same of the same ্ৰান্তিৰ বিটাটৰ কৰ্মপুত্ৰৰ কাছ the a correlated out game ners nere ere efficie मस्त्रहरूचा संतरम नामहि াদ বান্দানি ব্যব্ধ, এর ক্লেব का रामारण भावता रामाप द रहाकि विकासक (कार) अ**क रह**म हिन स्ट्रान्डम

क् शाल विश्वेभाष्ट्राव रेपालीहें स्व, द्वारा स्वरूपन नेवह steen wert are wan beate was vibre to saver years. वीतात करें परिएम उद्योग क्या अवस्थितिक स्थानिक विकास स्थापना क्षेत्र रनाकः, यह वित्र राज्यस्य रुगाव पुरुषक्षिः, पुत्रस्यकः, क्षारः व नेप्रदानं कर्षः त्यारं कृतारं केरदासः rece miefere. at beiffen यहा ब्यास नानामान प्रशंत (कर) তা ব্যাহততাৰ ক্ষেত্ৰত ও বস্তুতি বোৰক উপযোগী যুক্ত যা। দেশীয় to more see much of রমণা থেকে বাজালো পর্বভাগে

চেত্ৰালয়েল পাৰ্যাটোৰ অহসুৰ প্ৰাৰণ खन् वर्गी स्थालाई रोष का पानुपत्र शास्त्र समात्र अर. अर. कार करने भूत वरिद्य पहरे।

was account affer Saster ক্ষমতাকাৰী পাছ বিভাগনিকাৰ সমাজন বই উন্নয়ত্তি বিশ্ব ক্ষমতাৰ প্ৰতিক্ষা কৰিবল ক্ষমতাৰ বই উন্নয়ত্তি বিশ্ব ক্ষমতাৰ স্থানিক ক্ষমতাৰ বই উন্নয়ত্ত্বিক ক্ষমতাৰ স্থানিক ক্ষমতাৰ ক্ষমতাৰ স্থানিক ক্ষমতাৰ ক্ষমতাৰ স্থানিক ক্ষমতাৰ স্থ uren बस्टक दर्गमा का

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ब्राहर शही व प्रशासका प्रमण

WHEN WHEN SHIP! क लाम क्रम स्थाप अस्य प्राक रिकालकारण होते स्था आमें उचार स्पान सिंध राजन रामधार राज पुरु रू देन रेकार STREET STORY BARNE WHEE काल्य कि करि व संस्कृत देवत pertinental-a more case pare march fafer ein mit ereite al beuten গাতকা ক্ষাতা অগানে উপস্থিত এই ইলাইল মহাত উলাইনি न्यूम साम्बन्धरम्य सन्त्रेय कर्नात्र 'स्थान द्वाराच चला, चरि शतका कार नामि पुरु क्या सम्मर, म नुबा (पार प्राविकास करा गाउन

দেশের প্রথম ন্যানো স্যাটেলাইট প্রস্তুত



আশহনর ক্ষেত্রত ইনাইটাক্ত কথ টেলকালাক্তিক নাটোকার্য্য করাকা অনুসাল করকল ভিন শিক্ষাক্তিক क्त देविमिन्दिर लावावर्षित एर व्यवस्थावर्षे (नकारानदापि रेग्नियावन्त्र रेशिनाविध्यान लंदालक (२१० का, द्वाक विश्वविद्यालयह देगांची देशन ता बालांगर ए मेरनन बालांगर वय: লাৰ মাৰ্থকেৰে বিন্যালয় আগতে বলোৱেশ পুৰুষ্ণালৰ ঘাইকিয়া নিয়কি আৰ্থনাত হবি লাগেৰীৰ

রাম বিপিন্তাকে কর্মকুর প্রাক্তর বিভিন্ন ইত্যাহিত্তি প্রাক্তি হয় হয়ত প্রাক্ত

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stantonic state teach প্রার ব্যাপারে প্রার্থিত কর্মন প্রকাতির কলা শ্রিক্তিনারন মুখ্যমন্ত্রিক আছে বাচাকে ব্যাহার্ক বিভাগা একচণারণ बरालक क्रिकेटिंग प्रदूषा । appa unite (\$655 months) SHIP VITAING HE CENTR त्वानकृति । नवक व्यक्ति

बामाञ्चल विद्यालय नाजवारा व का अन्यक्त नाष्ट्र (गाटान) काम र प्रशासन विकास प्रकार STAR ONE WINDS TON WHITTERS STAT THESE BE guighte give trian wer विश्वामी । क्यांस, श्री मानदम त्था अर विकारक रिक व वर्गक तम चरिन्द्र हास्त्र स्थान कान की तक वृत्ति के नार्ती त्या प्रदेश कार का नाम वृत्ति प्रवाहत monormal extrapes once

Daily prothom Alo – Thursday; February 9, 2017





জাপাদের কিউৎ ইনস্টিটিউট অব টেকনোলজিতে বাংলাদেশের তিন শিক্ষার্থী তৈরি করছেন নাানো সাাটেলাইট। উৎক্ষেপণ জাপান থেকে হলেও বাংলাদেশে বলে সাাটেলাইটটি নিয়ন্ত্ৰণ করবেন এ দেশের শিক্ষার্থীরাই। ভালের বিশ্বাস, এই ফুদ্র কৃত্রিম উপগ্রহই একদিন বত মুপ্ত









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Quick f	acts about		

Quick lacts about bangladesii				
Population	161,083,804			
Density	1,237.5 / km^2 (3,205.1 / mi^2)			
Language	Bengali			
Independence Year	1971			
Capital	Dhaka (Dhaka)			
Currency	Taka			
GDP	174,000,000,000 (2014 data)			
GDP per Capita	1,080 (2014 data)			
Land Area	130,168 km ² (50,258 mi ²)			
Water Area	13,830 km ² (5,340 mi ²)			
Neighbouring Countries	India, Myanmar			

http://www.worldatlas.com/as/bd/where-is-bangladesh.html

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Shpno Niye Prothom Alo – Sunday; June 26, 2016

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news first an upon

भियापीता देश प्रशानिका निर्माण SMAYERS THESE वजरहः जाम ८०० किरणाभिमित्र ५ भरतते কথাপথে উথ্যোপগ ययागरनास शहरतम मुर्गाधकानाम शकति सम्बद्ध समुख्यामा ক্রতা কৃষি পরিশিক্তির ছবি পাঠানে এই

मार्थिया अध्यक्तिकार्य है.





BRAC University vesterday became the first Bangladeshi educational institution to get its very own nanosatellite, developed and assembled by three of its students using technology and facilities of a Japanese university.

"BRAC ONNESHA", a cube meastiring 10cm along its edge and weighing around one kilogramme. will be launched into low Earth

SEE PAGE 10 COL 5

span, they added

It will also play the national anthem on days of national importance, observe space environment and help monitor its own location, they said. The university has already started building a ground station at its Mohakhali campus in the capital

BRAC University Vice-Chancellor Prof Sved Saad Andaleeb received the nanosatellite from Kyushu institute of Technology (Kyutech) President Prof. Yuji Oie in Kitakyushu, Japan

Connecting, via Skype, in a ceremony on the Mohakhali rampus, he said, "It will generate the kind of information which will help us in policy planning. Space is one frontier where we have to look at now Space keeps many promises for us."

The project was costing 'a few crose taka", he responded to a journalist's

An assistant professor at the University of Texas in Austin, Arifur Rahman Khan first came up with the idea of the nanosatellite project while

It was then taken forward by him acquaintance, Associate Professor Mc Khablar Rahman of the BRAC University computer science and engineering

People initially felt hesitant to take up the challenge but later on realised the benefits, said Anfur on joining from the

BRAC University started space and remote sensing research in collaboration with Kyutech and Bangladesh Space Research and Remote Sensing Organisation in 2014.

The three nanosatellite developers -Raihana Shama Islam Antara, Abdulla Hil Kafi and Maisun Ibu Monowar - are now postgraduate students of applied science for integrated system engineering. at Kyutech.

"We will have five to ax minutes to collect data from the satellite when it will para over Bangladesh each day." said Kali-"It is like a dream come true," added Antara

BRAC University mathematics and natural sciences department Chairperson Prof AA Ziauddin Ahmed. Bangladesh Telecommunication Regulatory Commission Chairman Shahiahan Mahmood and First Secretary Toshiyuki Noguchi of the lapanese embassy in Bangladesh, among others.



The Daily Star – Thursday; February 9, 2017



11. BRAC ONNESHA ground station operation

This material was provided by BRAC University.



Tracking BIRDS Satellites from BANGLADESH Ground Station , BRAC University

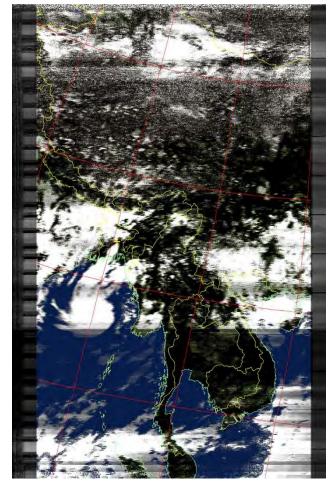


BRAC University Teacher, Students & BTRC personnel, are trying to analyze the outside noise as this ground station is situated in densely RF area.

Custom-made UHF Yagi Antenna is being used to receive BIRDS satellite signal from BRAC University Ground Station.







This picture of **Cyclone Mora** has been captured through NOAA-19 satellite in BRAC ONNESHA GS, right before the costal areas of Bangladesh being hit.



12. A Russian Web article about BIRDS-1



Африка включилась в космическую гонку, запустив свой первый спутник

Roughly translated: "Africa joins the space race by launching its first satellite"



Африка позднее большинства остальных континентов включилась в международную космическую гонку. Первым африканским спутником, выведенным на околоземную орбиту, стал аппарат GhanaSat-1, созданный командой инженеров из Университета всех наций, расположенного в городе Кофоридуа государства Гана. Проект отнял у учёных около двух лет, а его стоимость составила 50 000 долларов. Ещё в июне спутник был доставлен в Международный космический центр NASA, а на орбиту в июле его вывела ракета компании SpaceX.

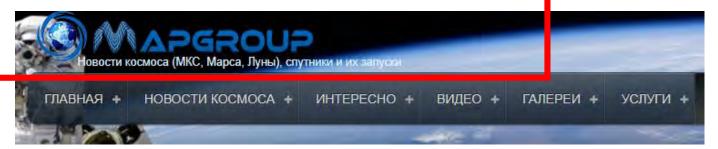
Темы / Космос / Африка включилась в космическу...

https://hi-news.ru/space/afrika-vklyuchilas-v-kosmicheskuyu-gonku-zapustiv-svoj-pervyj-sputnik.html#comments



13. An Ukrainian web article about Kyutech's BIRDS Project

This is a website based in the Ukraine >>



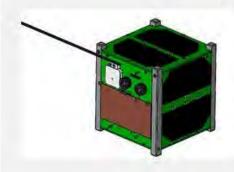
It covers topics related to the ISS, Mars, and the Moon. As well, it covers global satellites and their launches.

These screenshots were taken on 21 August 2017.

This article is continued on the next page.

Bird B, BTN, G, J, M, MYS, N, PHL (BRAC Onnesha, GhanaSat 1, Toki, Mazaalai, Nigeria EduSat 1)

- ≡ Родительская категория: Спутники
- ≡ Категория: Космические аппараты (спутники) Японии



Bird B (BRAC Onnesha), Bird G (GhanaSat 1, ANUSAT 1), Bird M (Mazaalai, NUMSAT 1), Bird N (EduSat 1), Bird BTN, Bird MYS, Bird PHL - космические аппараты созданы в образовательных целях японским Технологическим институтом Кюсю (КІТ) в качестве совместного проекта Global Multi-Nation Birds Satellite, который является трансграничным междисциплинарным спутниковым проектом для стран, не являющихся космическими странами, поддерживаемых Японией.

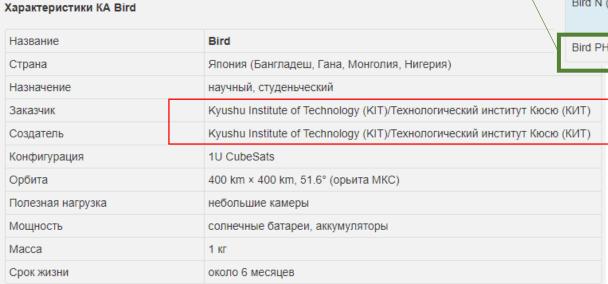
Этот проект развивается в несколько этапов. На первом этапе принимают участь в проекте четыре страны-участницы: Гана, Монголия, Нигерия и Бангладеш. В течение двух лет студенты должны спроектировать, разработать и научиться эксплуатировать пять единиц идентичных 1U CubeSats.



Continued from the previous page...



BIRDS-2 are mentioned here



	Запуск					
	КА	Дата	Космодром	PH	Примечание	
	Bird B (BRAC Onnesha)	03.06.2017	Космический центр Кеннеди (США)	Falcon-9 v1.2	c Dragon CRS-11, NICER, MUSES, ROSA, Bird G, Bird J, Bird M, Bird N	
	Bird BTN (Bhutan 1)	2018	Bhutan		with ?, Bird MYS, Bird PHL	
/	Bird G (GhanaSat 1, ANUSAT 1)	03.06.2017	Космический центр Кеннеди (США)	Falcon-9 v1.2	c Dragon CRS-11, NICER, MUSES, ROSA, Bird B, Bird J, Bird M, Bird N	
	Bird J (Toki)	03.06.2017	Космический центр Кеннеди (США)	Falcon-9 v1.2	c Dragon CRS-11, NICER, MUSES, ROSA, Bird B, Bird G, Bird M, Bird N	
	Bird M (Mazaalai, NUMSAT 1)	03.06.2017	Космический центр Кеннеди (США)	Falcon-9 v1.2	c Dragon CRS-11, NICER, MUSES, ROSA, Bird B, Bird G, Bird J, Bird N	
	Bird MYS	2018	Malaysia		with ?, Bird BTN, Bird PHL	
	Bird N (EduSat 1)	03.06.2017	Космический центр Кеннеди (США)	Falcon-9 v1.2	c Dragon CRS-11, NICER, MUSES, ROSA, Bird B, Bird G, Bird J, Bird M	
	Bird PHL	2018	Philippines		with ?, Bird BTN, Bird MYS	

<<< Kyutech is mentioned here



End of **BIRDS Project Newsletter**

Issue Number Nineteen

This newsletter is archived at the BIRDS Project website:

Project website: http://birds.ele.kyutech.ac.jp/

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

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

