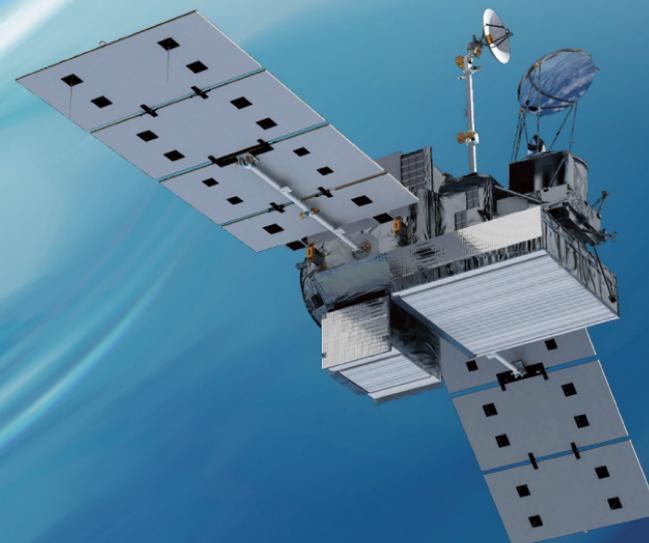




DPR Sensor Status

Kinji FURUKAWA
Acting GPM/DPR Project Manager
Japan Aerospace Exploration Agency



Outline



- * Operations Status of DPR
 - * Launch & Early Orbital Checkout
 - * Orbital Operation Status
 - * Mission Operation System Status

- * Status of Calibration and a Schedule of DPR L1
 - * DPR L1's New Versions and Their Reprocessing Schedule
 - * Future Work Toward DPR L1 V05

- * Summary

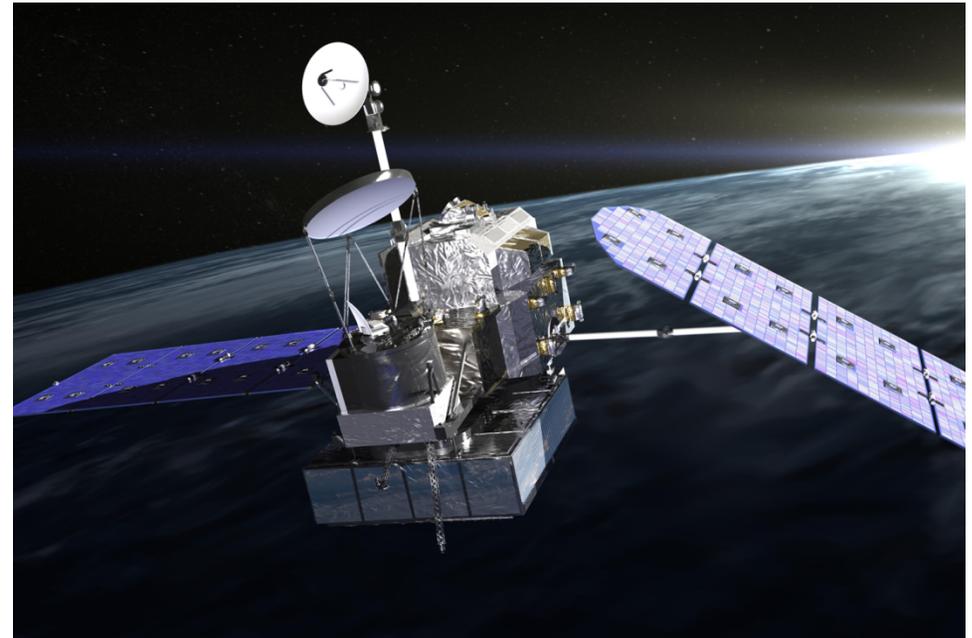


Operations Status of DPR



Launch & Early Orbital Checkout

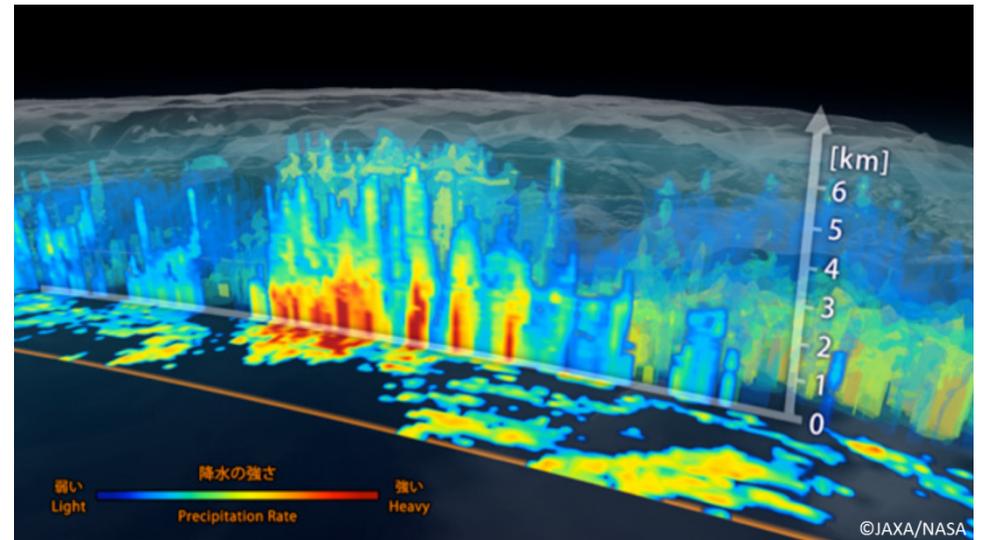
- * GPM Core Observatory was launched from the Tanegashima Space Center, JAXA on Friday, Feb. 28, 2014 (Japan Time)
- * DPR was powered on March 2nd, 2014, and DPR Checkout and Initial calibration and Validation were completed.
- * JAXA checked DPR products and concluded that DPR products were ready to public release. On September 2nd, 2014, DPR products “go public”.



© NASA

Orbital Operations Status

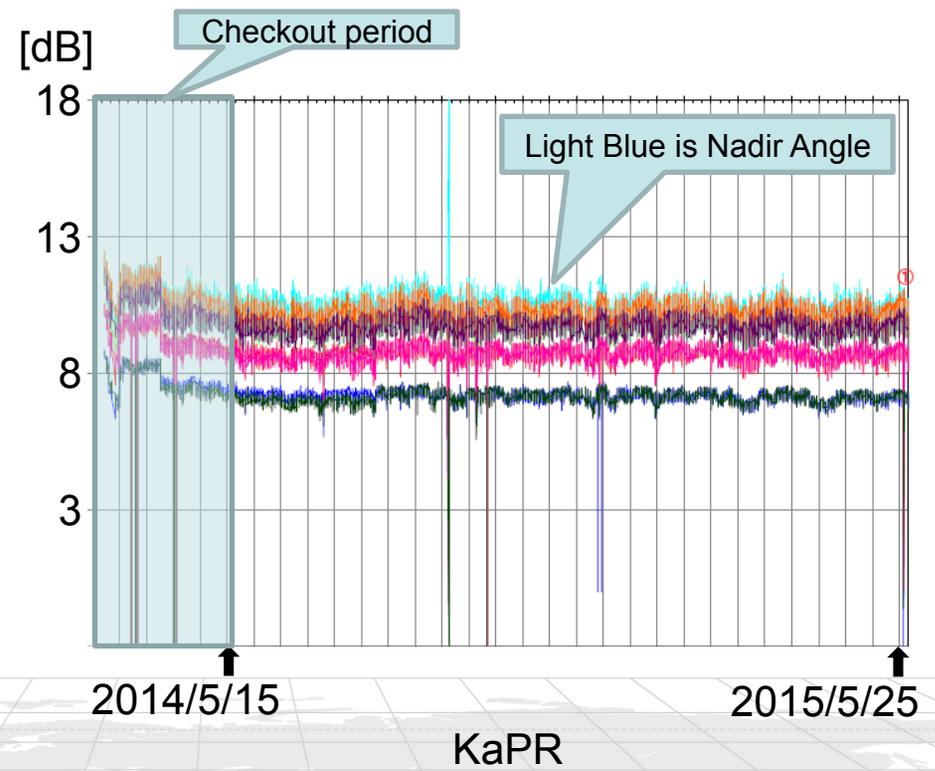
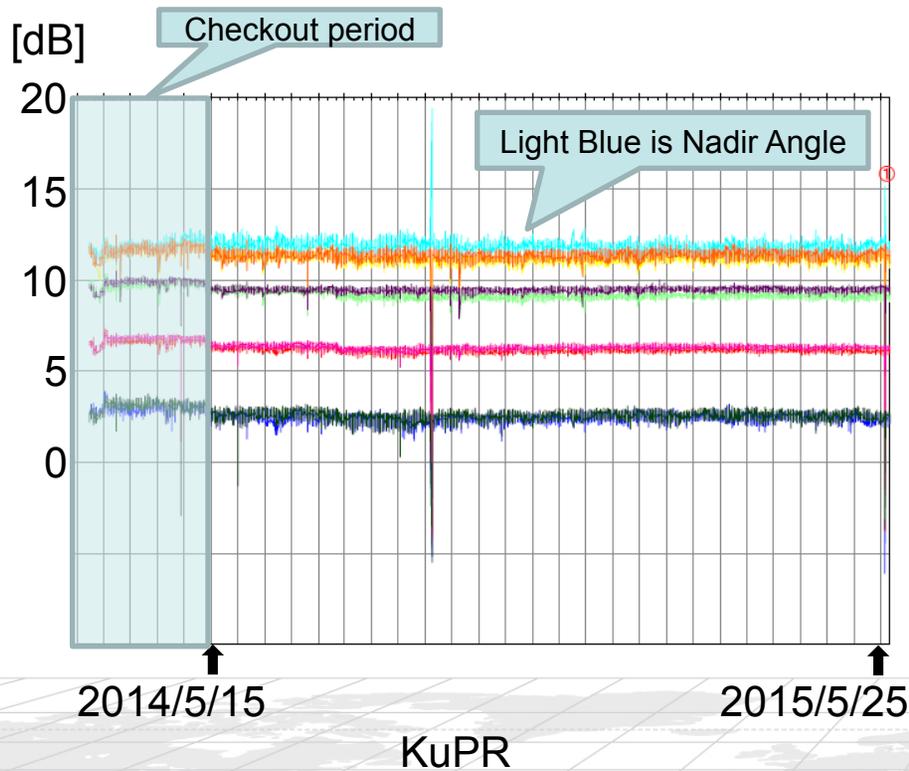
- * After data release JAXA is continuing DPR data monitoring to confirm that DPR function and performance are kept on orbit.
 - * Operation Mode
 - * Temperature
 - * Bus Voltage and Current
 - * System Noise
 - * Sea Surface Radar Cross Section (σ_0)
 - * Internal Calibration
 - * External Calibration
 - * TX/RX Amplifier Status



DPR first image.

Sea Surface Radar Cross Section

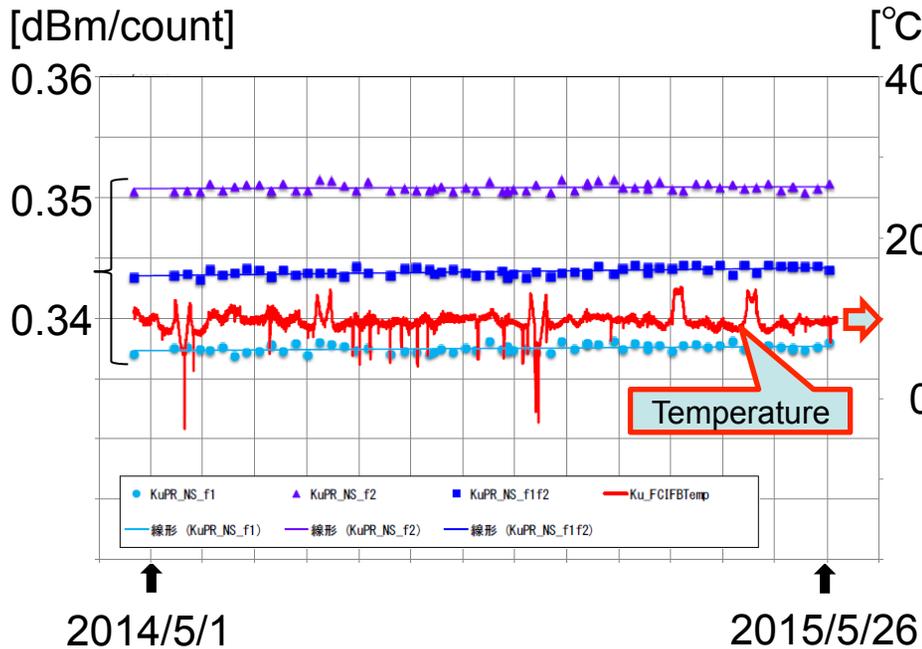
- * Sea Surface Radar Cross Section trend is monitored to confirm radar performance.



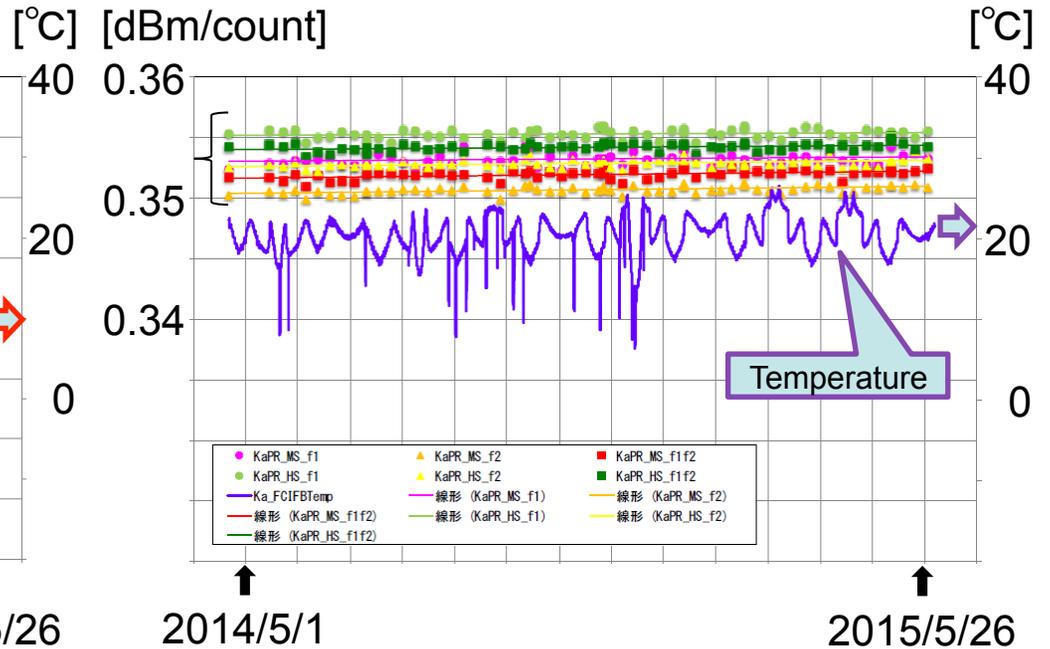
- * Both KuPR and KaPR Sea Surface Radar Cross Section trend are almost stable. There is no degradation of KuPR and KaPR performance.

Internal Calibration

- * Slope of input output characteristics of receiving system trend is monitored to confirm stability of receiving system.



KuPR

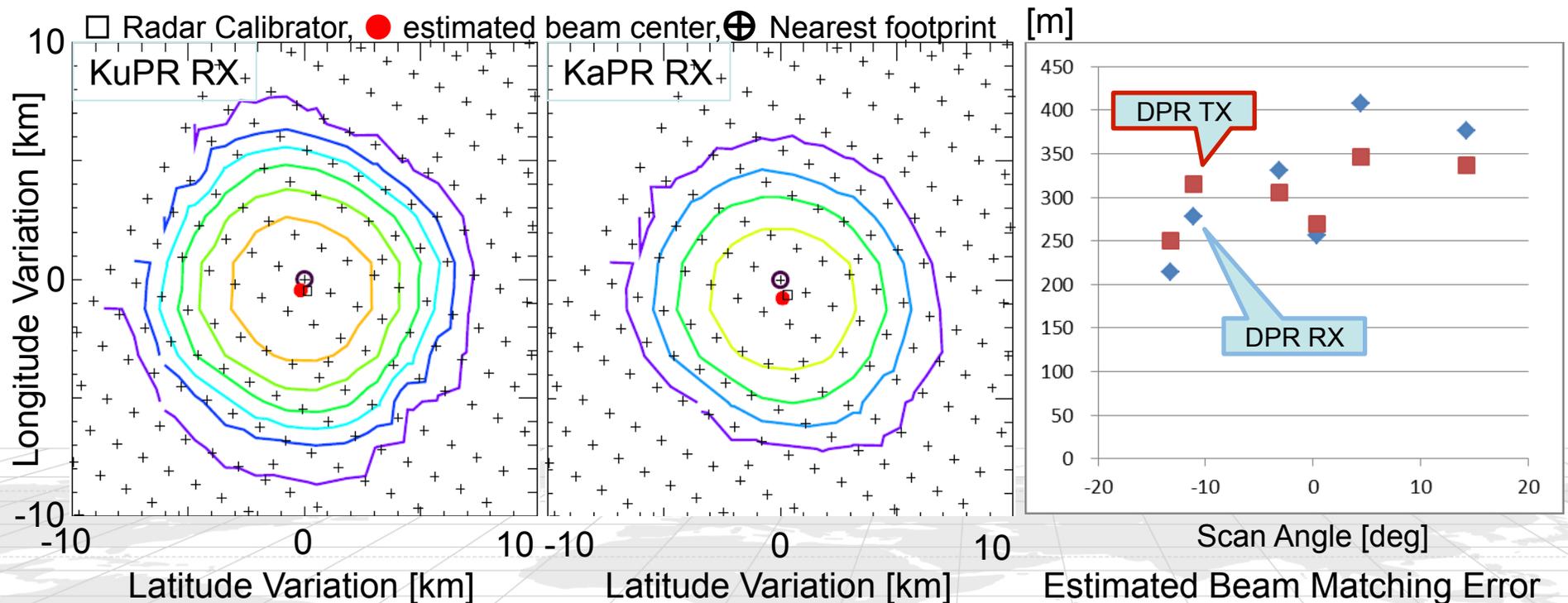


KaPR

- * Both KuPR and KaPR slope of input output characteristics of receiving system trend are almost stable. There is no degradation of KuPR and KaPR input output characteristics.

Beam Matching (External Calibration)

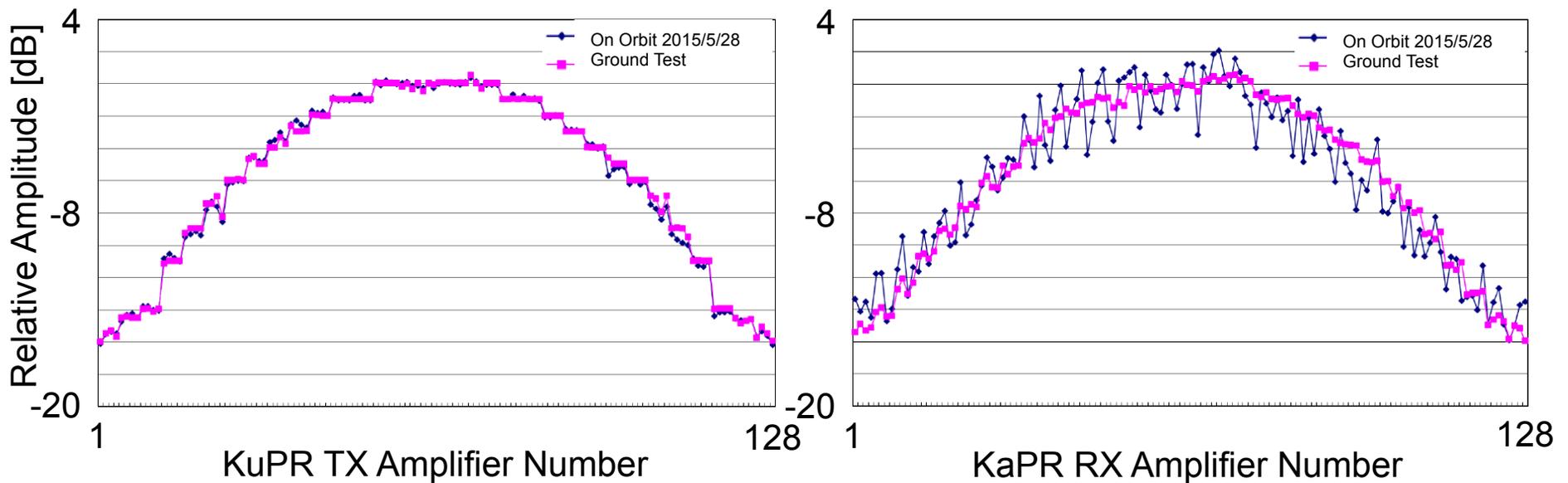
- * KuPR and KaPR antenna beam should be matched under 1,000 m for dual-frequency algorithm.
- * JAXA conducted external calibration to measure beam pointing accuracy and estimate beam matching error.



- * Estimated Beam Matching Errors are under specification (1,000 m) during this spring season External Calibration campaign.

TX/RX Amplifier Status

- KuPR and KaPR consists of 128 TX/RX modules, TX/RX Amplifier Status were monitored to confirm that TX/RX amplifiers keep their performances.



- Relative Amplitudes of KuPR and KaPR TX/RX amplifiers are almost same as ground test results. There is no degradation of KuPR and KaPR TX/RX amplifiers performance.

DPR data monitoring results show that there is no degradation of DPR function and performance from Launch till now.

Mission Operation System Status



* MOS operation : Normal

* processing

* V03 products is available from G-Portal.

* product list, data missing list information is posted below; <https://www.gportal.jaxa.jp/gp/opeinfo.html>

* JAXA plan to use super computer for future re-processing (V05, after JFY2016). 1yr-DPR reprocessing can be finished within a few days.

* TOP5 data distribution

* 1.GSMaP hourly (HDF)

* 2.GSMaP hourly (text)

* 3.GMI L2

* KuPR L2

* KaPR L2

The screenshot shows the G-Portal website interface. At the top, it says "G-Portal" and "Globe-Portal (BETA)". There is a user account section with "User account: nio" and a "Logout" link. A navigation menu includes "Home", "Search Products", "View/Change User Property", "Operational information", "Order history", "Link", and "Download Information". A news item from June 25, 2015, mentions "User manual of LFTP". A password expiration warning is visible: "The password is expired. For security reason, please change the password." Below this, there are links for "1.Registration/Login" and "2.Physical Q". A "Search products by theme" section offers two options: "Select by Physical Quantities" and "Select by Spacecrafts/Sensors". A "Load Search" button is also present. At the bottom, there is a search bar with a globe icon and a "Search" button, and a footer with "GPM/ DPR, GMI, COMB" and "FAQ and User m Tutorial, FAQ and OS. Contact Us Please leave us y problem. Your op us improve our se".

Atmosphere		
Precipitation	Cloud	Water Vapor
Aerosol	Atmospheric Boundary	Radiation Balance

Status of DPR L1 calibration and a schedule of DPR L1 reprocessing



DPR L1's new versions and their reprocessing schedule



- * JAXA proposed a plan for new versions of DPR L1 in JPST yesterday. JPST endorsed it. V04 reprocessing will be started at beginning of January 2016.

- * In V04, JAXA will keep the DPR's calibration coefficients.
 - * Examination of DPR calibration on orbit has not completed yet.

- * The major changes from V03 to V04 are below.
 - * Format change (Add some variables)
 - * Empty granule correction
 - * Noise power change
 - * Geolocation toolkit update (v3.6 to v3.7)

- * In V05, JAXA plans to determine the calibration coefficients with a consistency with TRMM/PR.

Future work toward DPR L1 V05

- * JAXA will re-examine the following points for the DPR L1 V05 and PR V08.
 - * DPR internal calibration
 - * DPR external calibration
 - * Calibrate the Active Radar Calibrator (ARC) at NICT.
 - * PR internal calibration
 - * PR external calibration
 - * Effects by the changes of PR and DPR calibration coefficients.
 - * Consistency of precipitation rate and σ_0 at Ku and Ka, etc.



Summary

- * There is no degradation of DPR function and performance from Launch till now. JAXA is continuing DPR data monitoring to confirm that DPR function and performance will be kept during Nominal Observation Operation period, which will be ended 3 year 2 month after launch.
- * JAXA changed release schedule of DPR L1 V04. JAXA will not change the calibration coefficients in V04 because of remaining issues in them. JAXA will re-examine the calibration coefficients for both DPR V05 and PR V08.



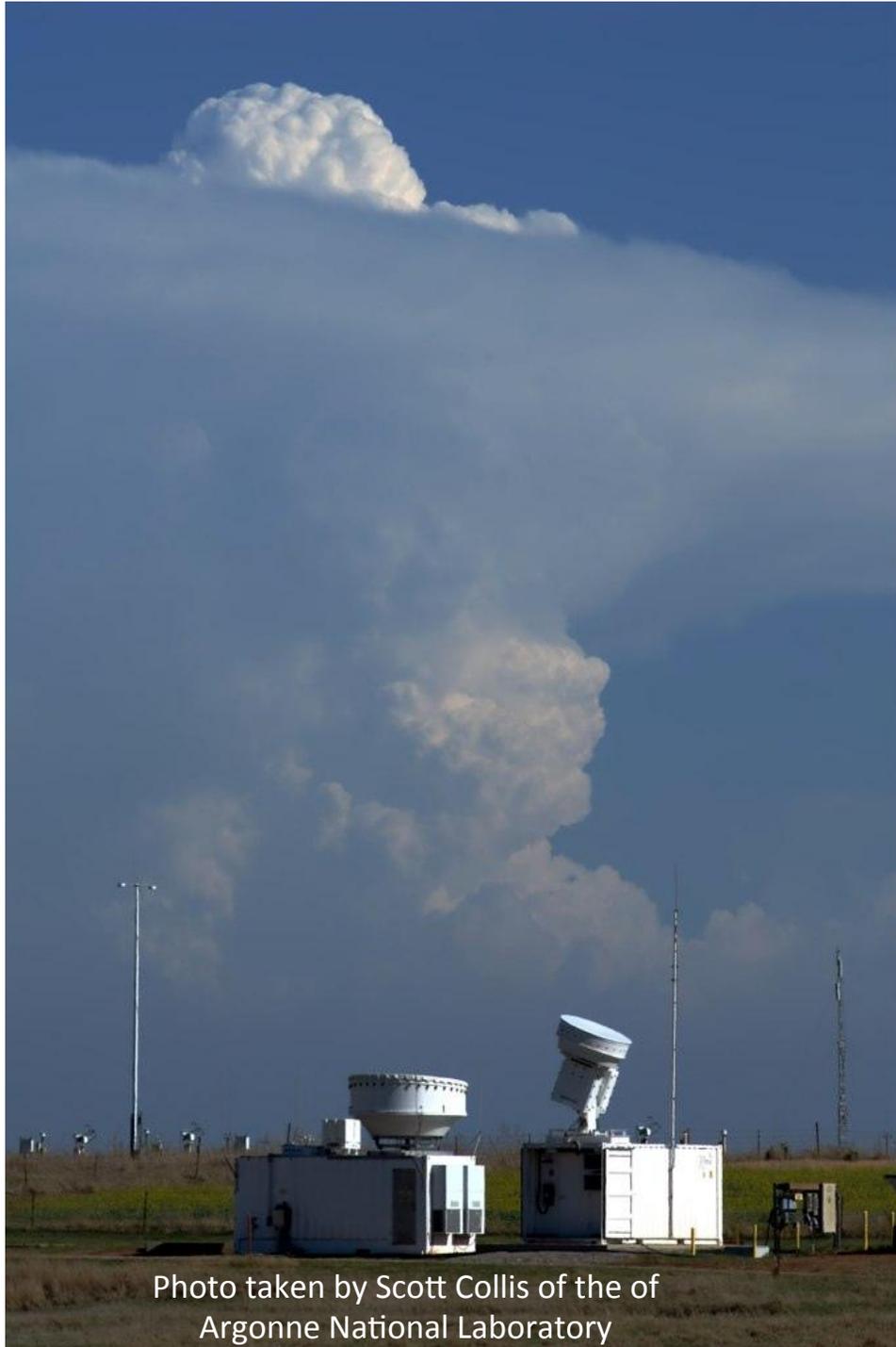


Photo taken by Scott Collis of the of
Argonne National Laboratory

JAXA's key message to GPM core
observatory in Japanese

雨雲を
味方にせよ

*Measure rain and snow for
the benefit of all*

*This support message represents our
strong desire to utilize GPM data for
our social benefit.*