

# INPE Report to WGCV-38



## WGCV 38

Co-Hosted by:

NOAA, USGS and NASA

NOAA Center for Weather and Climate Prediction (NCWCP)

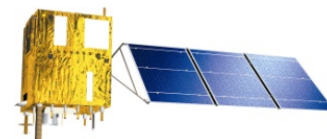
College Park, MD, USA

Sep 30th to Oct 2nd , 2014

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INPE

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# INPE

## Brazilian National Institute for Space Research

Director General: Leonel Fernando Perondi

Space and  
Atmospheric  
Sciences

Space  
Engineering  
technology

Earth  
Observation

Weather  
Forecast &  
Climate Studies

Satellite  
Tracking &  
Control Center

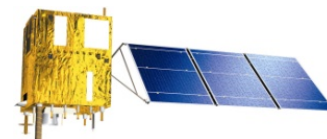
Integration &  
Tests  
Laboratory

Image  
Processing &  
geoinformation

Data Center  
CDSR

Associated  
Laboratories

Remote  
Sensing  
Application



# Remote Sensing Data Center at INPE

More than 800 TB satellite data: CBERS, LANDSAT, AQUA, TERRA, GOES METEOSAT, NOAA, ENVISAT, RADARSAT, UK-DMC-2, S-NPP, MetOp-B e RESOURCESAT.

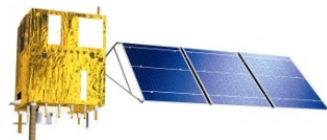
Currently, CDSR receives AQUA, TERRA, GOES-13, LANDSAT-7, NOAA-15, NOAA-16, NOAA-18, NOAA-19, MetOp-B e S-NPP

CDSR is already receiving RESOURCESAT-2 (LISS-3 and AWiFS) and images will be available in the INPE's catalogue in october, 2014

Ready to receive LANDSAT-8, FY-3, and GOES-R, FORMOSAT-7/COSMIC-2, CBERS-4

Data is freely distributed in the INPE's catalogue

<http://www.dgi.inpe.br/CDSR/>



# CBERS 3 launching failure

CBERS-3 was launched from China in **December 2013** using a Long March rocket  
Failure in the launching system

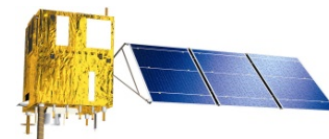


# CBERS-4

CBERS-4 will be launched on 7<sup>th</sup> december 2014 from China using a Long March rocket  
Same configuration as CBERS-3

Sensors	Resolution	Bands	Swath	Revisit	bits/pixel
MUX	20 m	B, G, R, NIR	120 km	26 days	8
PAN	5 m 10m	PAN G, R, NIR	60 km, off nadir (32°)	52 days	8
WFI	73 m	B, G, R, NIR	866 km	5 days	10
IRS	40m 80m	NIR, MIR, TIR	120 km	26 days	8

**Onboard recorder for MUX, PAN, IRS and WFI**

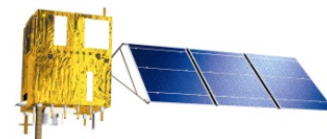


# CBERS- 4A

INPE and the Chinese Government will define a proposal for CBERS-4A in January 2015

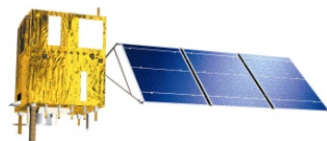
Sensors	Resolution	Bands	Swath	Revisit
MUX	16 m	B, G, R, NIR	94.9 km	31 days
HRC	2 m	B, G, R, NIR, MIR	94.9 km	31 days
WFI	55 m	B, G, R, NIR	683.9 km	5 days
APD	< 2.9 km	0.76-2.05 (4 bands)	833 km	-

APD: Polarized Detector for Aerosol



# Absolute Calibration Issues at INPE

- ❖ Responsible: Flavio Ponzoni ([ponzoni@dsr.inpe.br](mailto:ponzoni@dsr.inpe.br))
- ❖ Site in Brazil: nearby Luiz Eduardo Magalhães (LEM); agriculture region located in the state of Bahia, northeast of Brazil; coordinate  $12^{\circ} 23' 15.82''$  S and  $46^{\circ} 7' 38.51''$  W Fazenda Marechal Rondon (farm)
- ❖ Studies have been focused on improving measurements uncertainties estimation

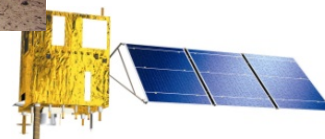
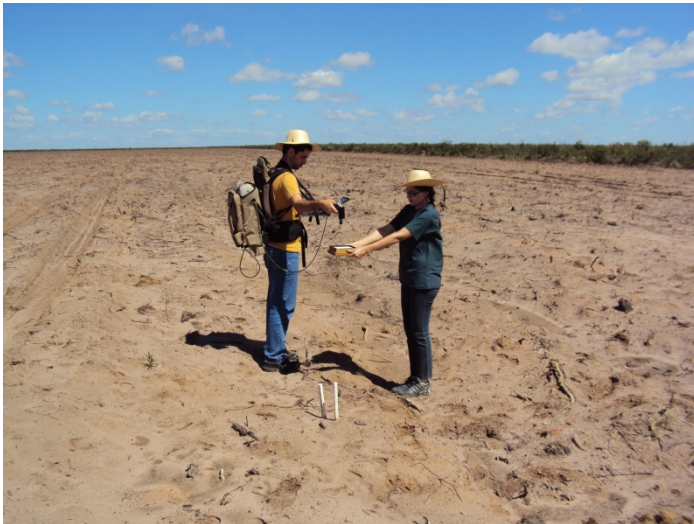


# Experiments at LEM site

The objective is to estimate uncertainties of different radiometric measurement setups on a calibration reference surface in Brazil.

New radiometric data collection was performed in July 2014 on a new reference surface located in LEM.

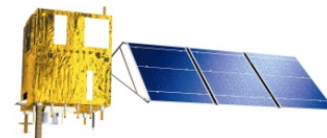
During this field campaign different setups were adopted to calibrate the OLI/Landsat 8 sensor.





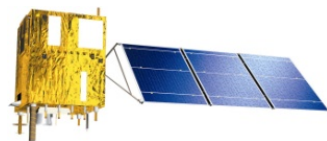
# Calibration at Atacama Desert

- ❖ Joint calibration campaign with two Chilean institutions in August, 2014 : Universidade de Chile (UCHile) and Servicio Aerofotogramétrico (SAF)
- ❖ The Brazilian-Chilean joint campaign was carried out in the Atacama desert
- ❖ Objective: calibrate OLI/Landsat 8 sensor and compare the results with those obtained from LEM site



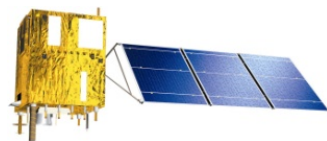
# International Cooperation

- Dennis Helder from South Dakota State University will supervise a Ph.D. student (Cibele Teixeira Pinto) as an exchange visitor for one year (granted by Science Without Borders Program in Brazil)
- Additional field campaign will be carried out in USA to complete the data set that she has already collected in Brazil and Chile to calibrate OLI/Landsat 8 sensor.
- The data collection will be the basis of her Ph.D. thesis (estimation of measurements uncertainties)



# Comments

- ❖ INPE would like to participate in calibration campaigns organized by Cal/Val group
- ❖ How can INPE contribute for the RADcalNet project presented by Nigel Fox?



- Thanks!
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