

## CALLISTO status report/news letter #42

### New CALLISTO Antenna Station at Universiti Kebangsaan Malaysia (UKM)

A new CALLISTO spectrometer and an antenna have recently been installed at Permata Pintar School, Universiti Kebangsaan Malaysia (UKM), Bangi, Malaysia. This project is running under the Institute of Space Science (ANGKASA) UKM. The geographical coordinate of the site is listed in Table 1 while Figure 1 shows the project team and the indoor part of the Callisto system.

*Table 1. Geographical Coordinates of the site*

| Coordinates | Value         |         |
|-------------|---------------|---------|
| Latitude    | 2.9170071 N   | Desimal |
| Longitude   | 101.7883460 E | Desimal |
| Height      | 78            | Meter   |
| Local Time  | UTC + 8:00    | Hour    |

Leader of Callisto Project: Prof. Dr. Mohammad Tariqul Islam

Project Members:

Dr. Alina Marie Hasbi

Radial Anwar

Azam Zavvari



Figure 1: From left to right: Dr. Alina Marie Hasbi, Radial Anwar, Prof. Dr. Mohammad Tariqul Islam, Azam Zavvari in UKM Callisto station.

CLP5130-1 log periodic antenna is utilized in the front-end of the system (Figure 2). This antenna has linear polarization and can cover operating frequency from 50 MHz to 1.3 GHz, with gain of about 10 – 12 dBi. Length of its boom is 2 meters, with maximum width of 3 meters. Beamwidth of this antenna is of about 60-70 degrees at E-plane and 110-130 degrees at H-plane. By considering the beam of the antenna and the site location, the antenna is installed fixed-mounted toward the zenith running north-south direction. The minimum 60 degrees E-plane beam is enough to covers all declination of solar path throughout the year, while the minimum 110 degrees H-plane beam provides at least seven hours observation time.





Figure 2. The CALLISTO antenna located in Permata Pintar School UKM Bangi.

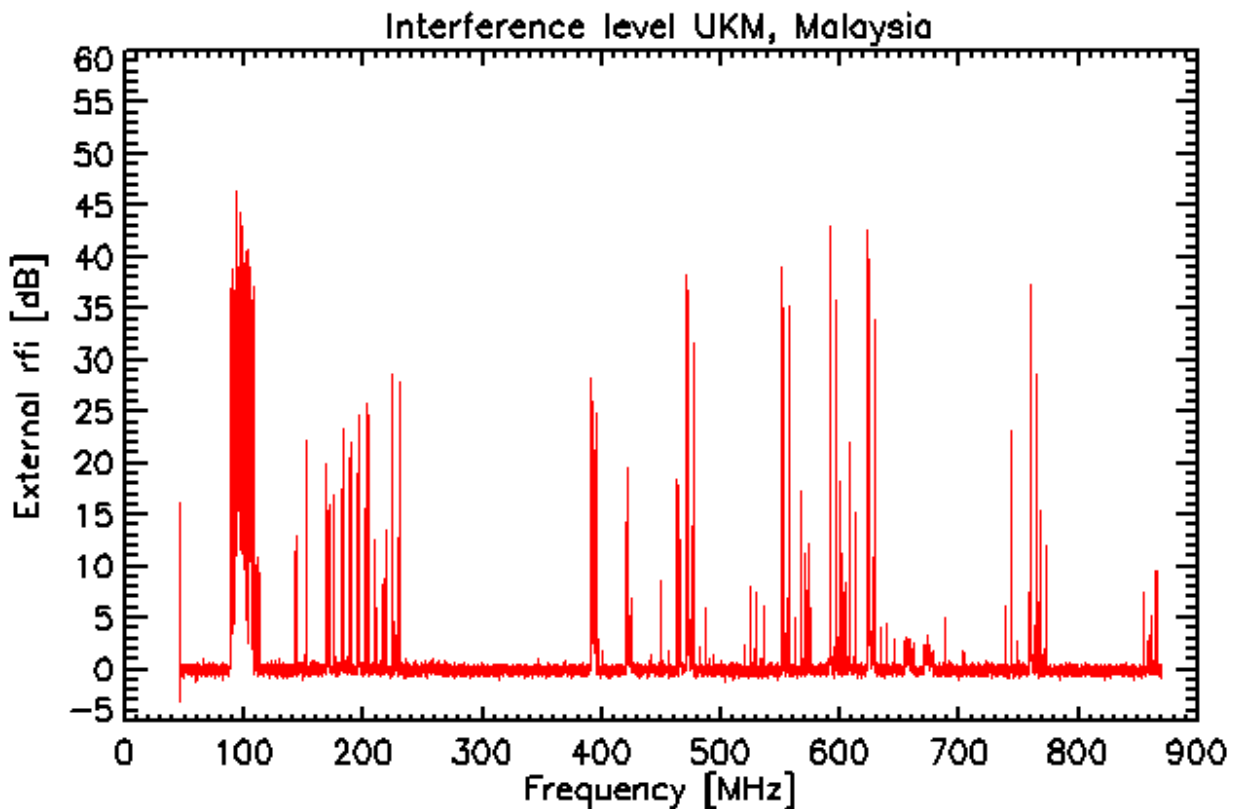


Figure 3: Low frequency spectrum taken with CLP-5130 log-per antenna. Spectrum shows external interference with reference to a 50 ohm termination resistor at ambient temperature. Beside a lot FM, DVB-T and TV-transmitters there are still quite a lot of channels which can be used for solar burst observations.

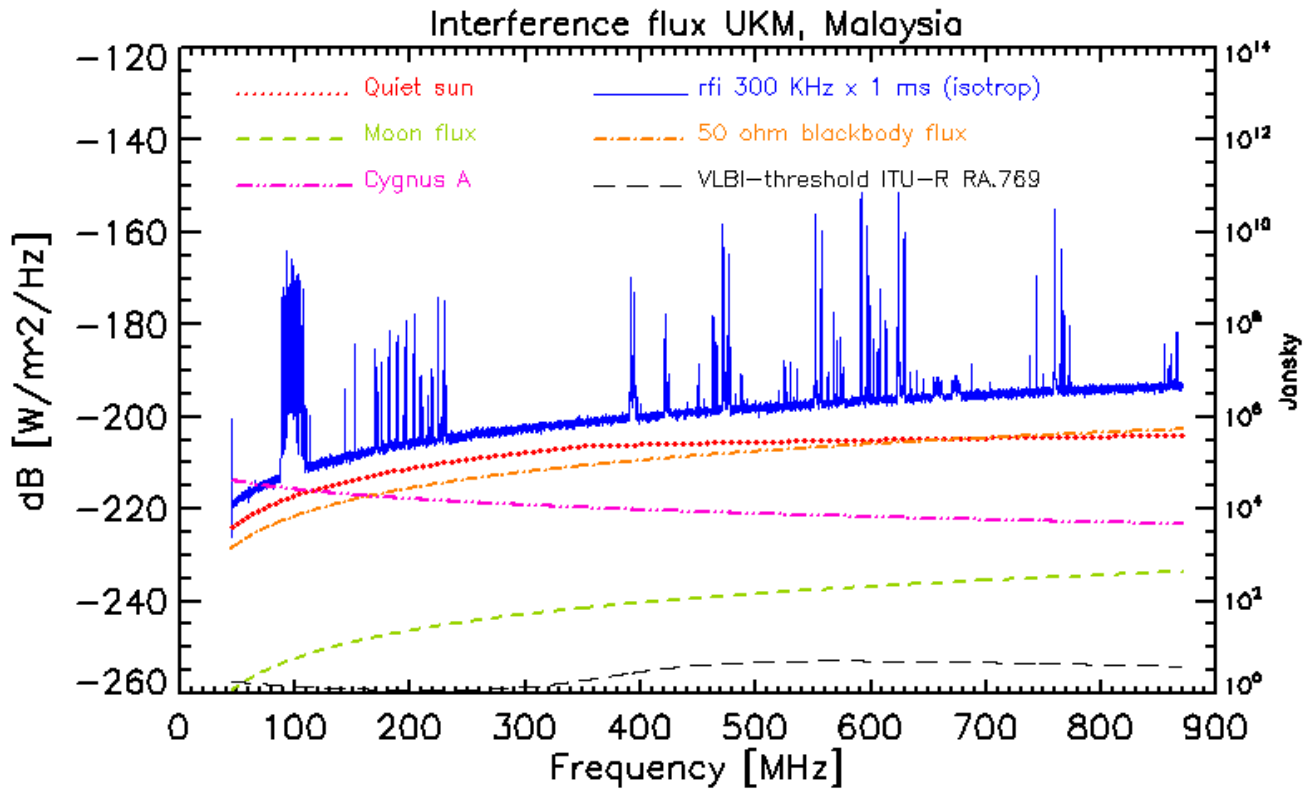


Figure 4: The same spectrum as in fig. 3 but now expressed as flux density compared with several natural sources and VLBI limit according to ITU-R RA.769. Best range for solar observations is obviously below 80 MHz, between 240 MHz and 380 MHz or above 780 MHz.

Now we are waiting for the 1st light from UKM....

**AOB:**

General information and data access here: <http://e-callisto.org/>

CALLISTO or Callisto denotes to the spectrometer itself while e-Callisto denotes to the worldwide network.

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