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Attachment(s):
(1) "Space Weather Monitoring Center Antenna Specifications at Helwan",
: 2.3 MB pdf, 13 pages.

: Re:
: The CALLISTO Station at Helwan University, Egypt.
:
:

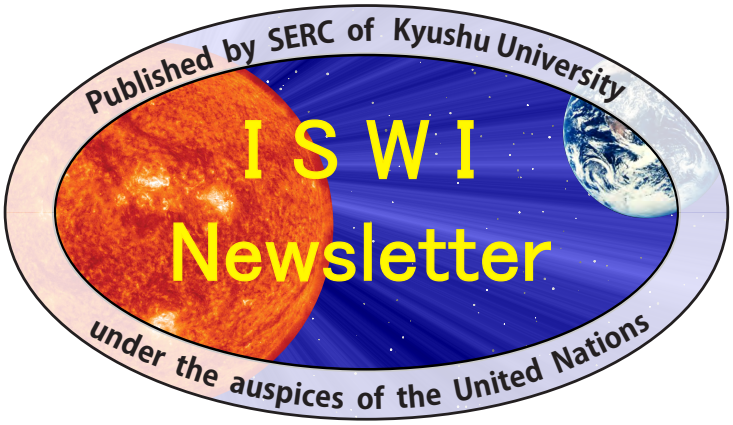
Dear ISWI Participant:

As you know, CALLISTO is a major instrument array of ISWI -- its status reports are routinely distributed by this newsletter.

Today, I attach a report from one CALLISTO station. They built their own RF antenna. So this serves as a model for other universities around the world to construct their own CALLISTO station.

If you recently constructed an ISWI array station, please send your report to me for newsletter circulation. Others can learn from your experience.

Faithfully yours,
: George Maeda
: The Editor
: ISWI Newsletter



This pdf was circulated in
Volume 4, Number 98,
on 21 August 2012.

The following report was received by this newsletter on 19 August 2012 from **Ms. Heba Ahmed.** It describes the RF antenna built at Helwan University (Egypt) for the CALLISTO station at the same university. CALLISTO is a major ISWI instrument array.

G. Maeda
Editor of the ISWI Newsletter
20 August 2012.

Antenna Specifications at Space Weather Monitoring Center ,Helwan University, Egypt.

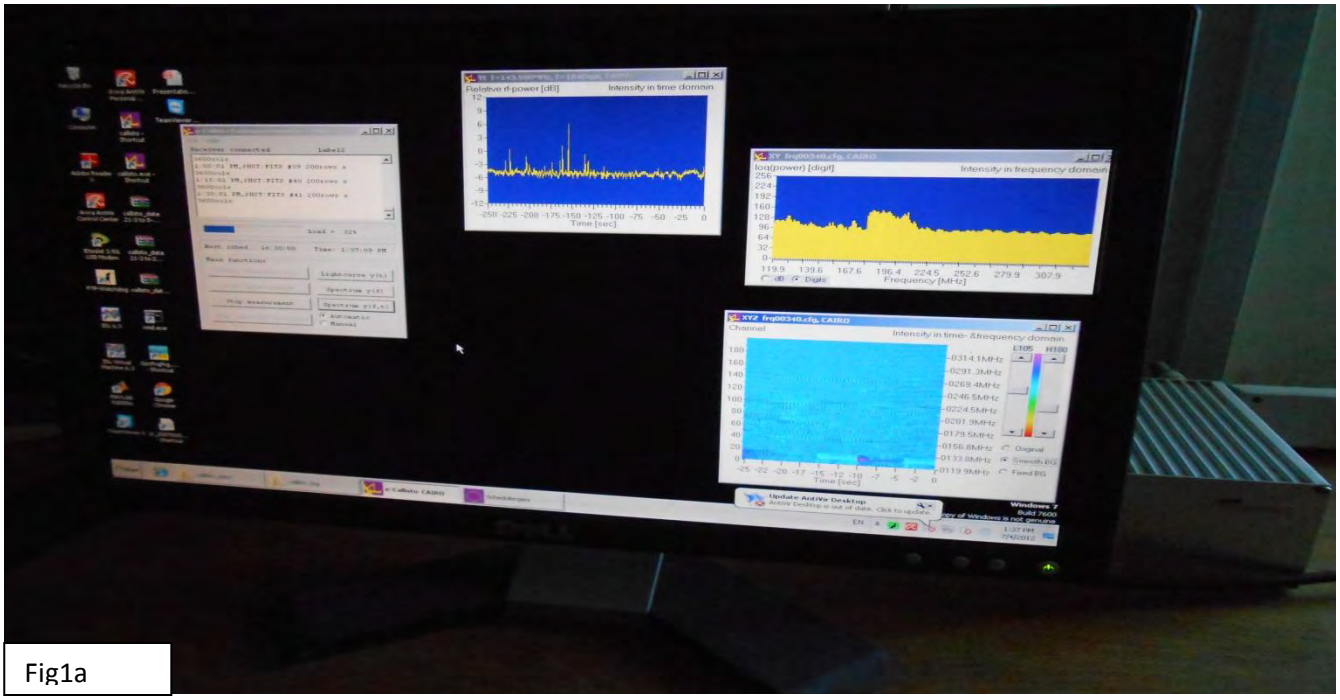


Fig1a

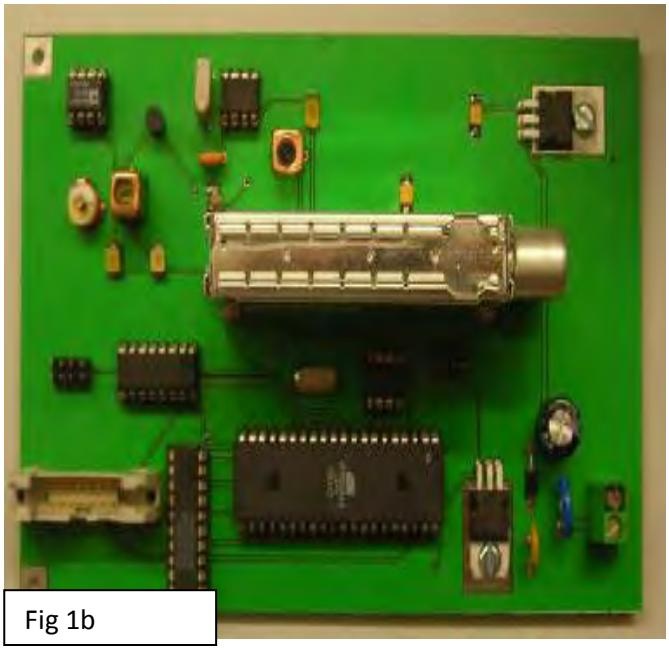


Fig 1b

Fig 1c

Antenna specification

- ***Boom: 25mm square tube.***
- ***Material: Aluminum (Al).***
- ***Element : 12 mm rod(solid)***
- ***Number of elements:19 per each side***

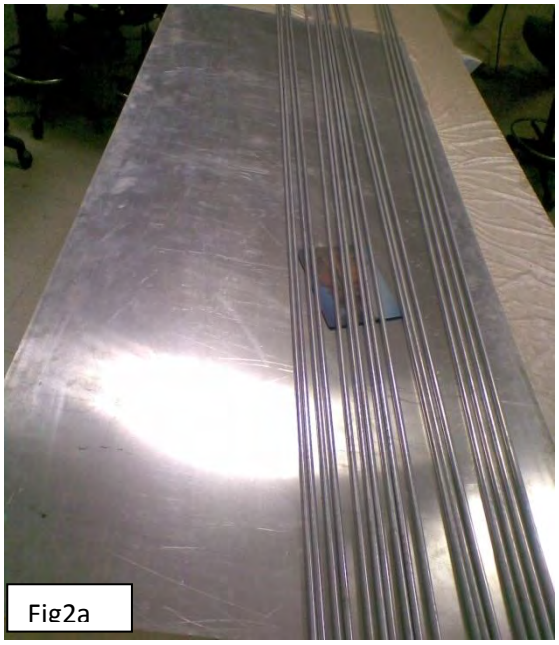


Fig2a

Fig2b

Dimension from 1-19 elements in centimeters:-

1- 275.5	8- 122.5	15- 55
2- 245	9- 109	16- 49
3- 218.5	10- 97	17- 44
4- 194.5	11- 87	18- 39
5- 173.5	12- 77	19- 35
6- 154.5	13- 68.5	
7- 137.5	14- 62	

Spacing between the elements.

From the bottom of the boom to the 1st elements is 109cm(don't forget to add 2 or 3 cm to the original length for fixing inside the boom).

• *1st element to 2nd is 54.8cm.	• *2nd element to 3rd is 48.7cm.	• *3rd element to 4th is 43.4 cm.
• *4th element to 5th is 38.6 cm.	• *5th element to 6th is 34.4 cm.	• *6th element to 7th is 30.6 cm.
• *7th element to 8th is 27.2 cm.	• *8th element to 9th is 24.2 cm.	• *9th element to 10th is 21.6 cm.
• *10th element to 11th is 19.2 cm.	• *11th element to 12th is 17.1 cm.	• *12th element to 13th is 15.2 cm.
• *13th element to 14th is 13.8 cm.	• *14th element to 15th is 12 cm.	• *15th element to 16th is 10.7 cm.
• *16th element to 17th is 9.5 cm.	• *17th element to 18th is 8.5 cm.	• *18th element to 19th is 7.6 cm.

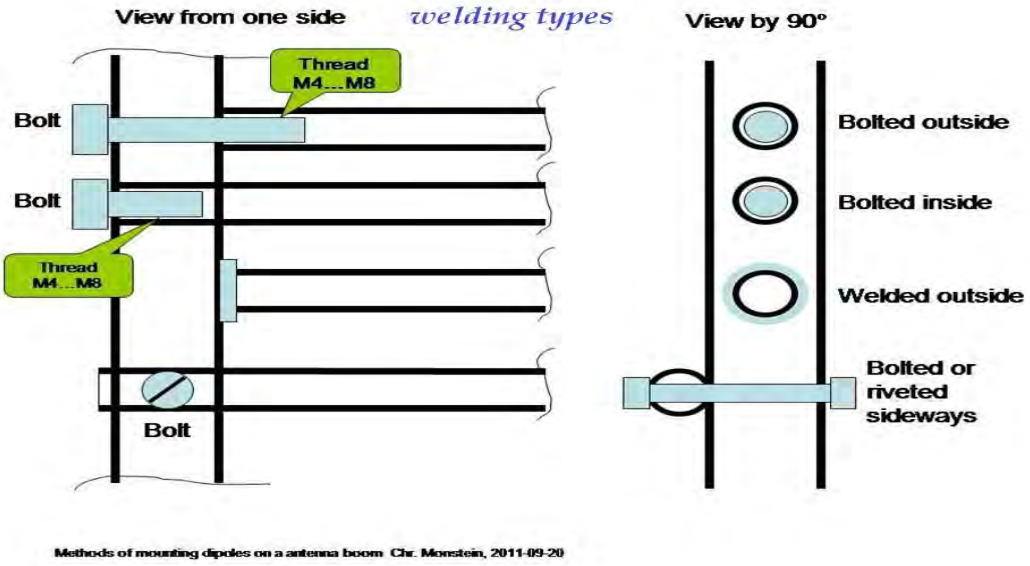
***19th to the top is 6.7 cm.**

- **Note: do not forget to add 2-plastic tubes diameter 4 0r 5 cm. for the first 7- elements attached to the boom as they are too long and too heavy for the boom so the need to be supplied .**
- **Don't forget to add other 2- plastic tubes 5 cm diameter 295 cm long on both sides.**

Fig3

This photo is on the roof while connecting the plastic tubes to the antenna from the right (Ali Farid-Eng Salah Ahmed-Rofida-Antwan -khaled Aly)

Welding



Methods of mounting dipoles on a antenna boom Chr. Monstein, 2011-09-20

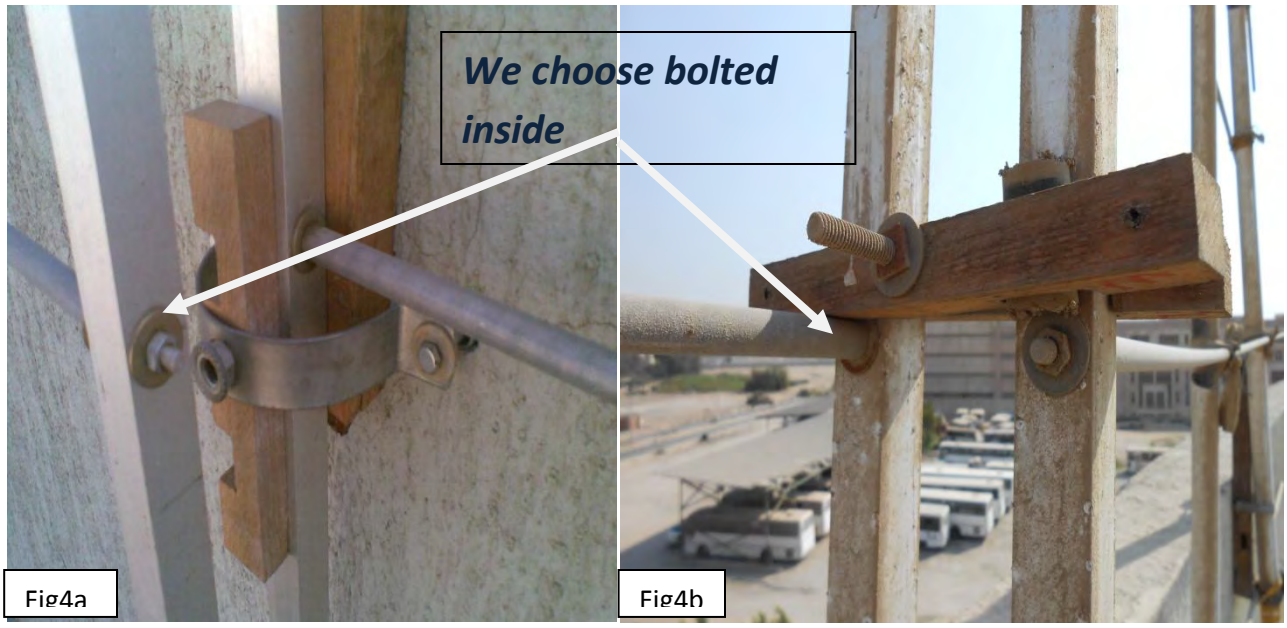


Fig4a Fig4b

Construction and collection

Fig5a

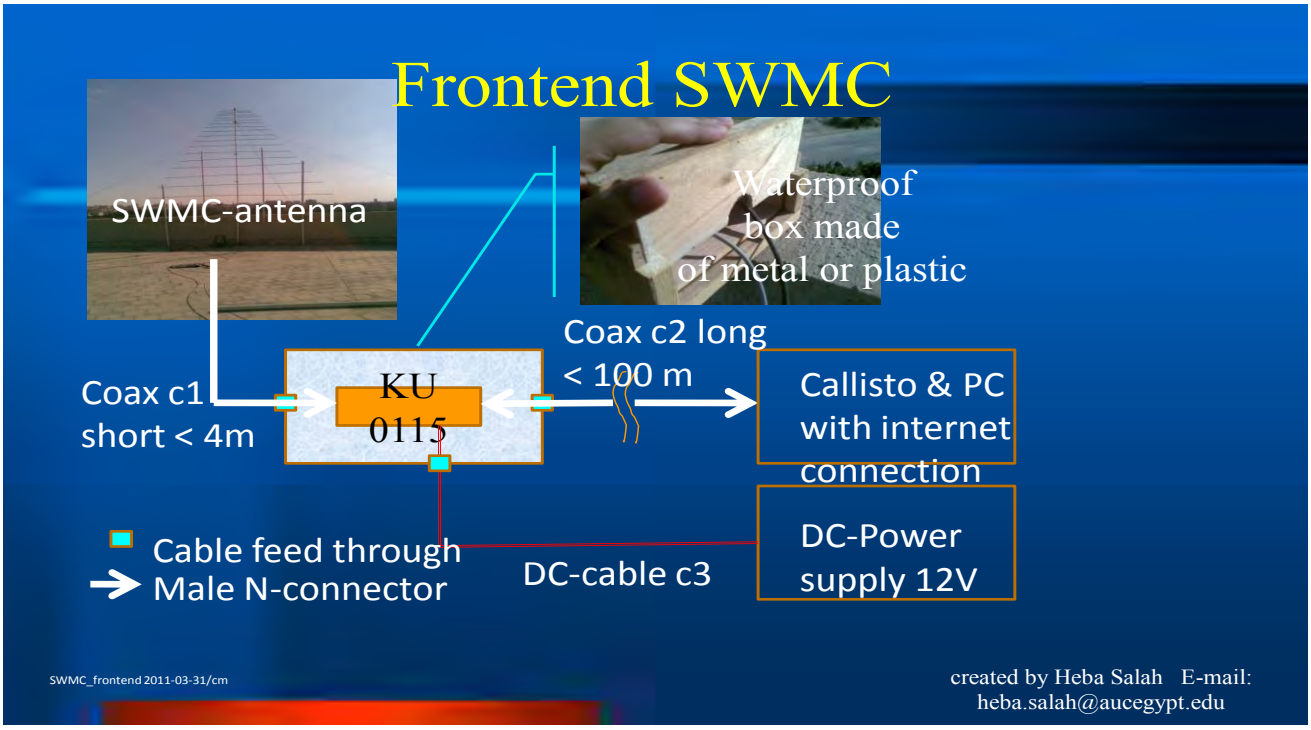
Fig5b

Fig 5c

Fig5d

Fig 6

We should connect the wires inside each boom in order not destroy form sun and weather conditions.



Preparing for installing

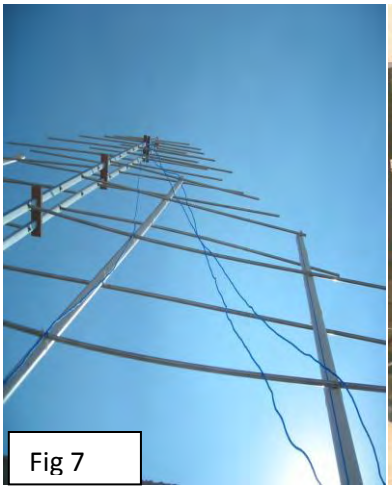


Fig 7

Pulling the antenna from 3-directions with ropes and dipl. ing Christian testing the antenna in SWMC

Fig 8

The pre-amplifier inside wooden box in-order to protect it from weather conditions and dust which could affect the signals, making an opening for getting the wires out , one for connecting to the antenna & the others to the Callisto spectrometer which is placed next to the PC.

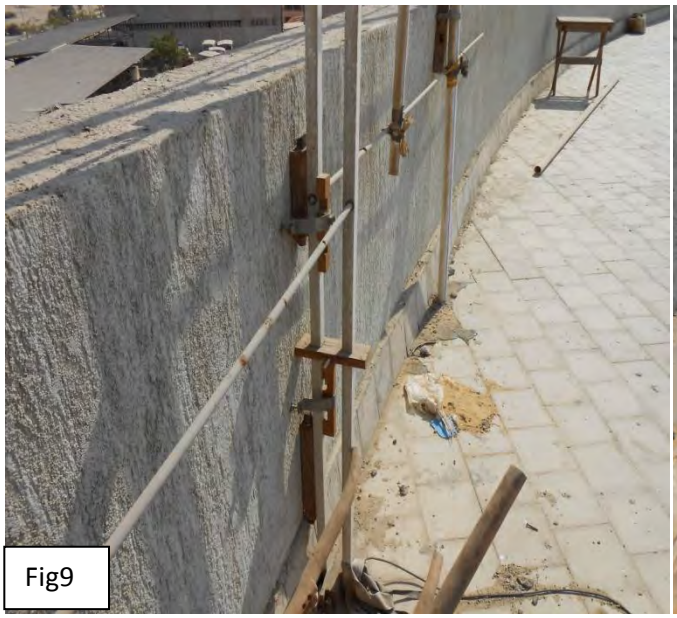


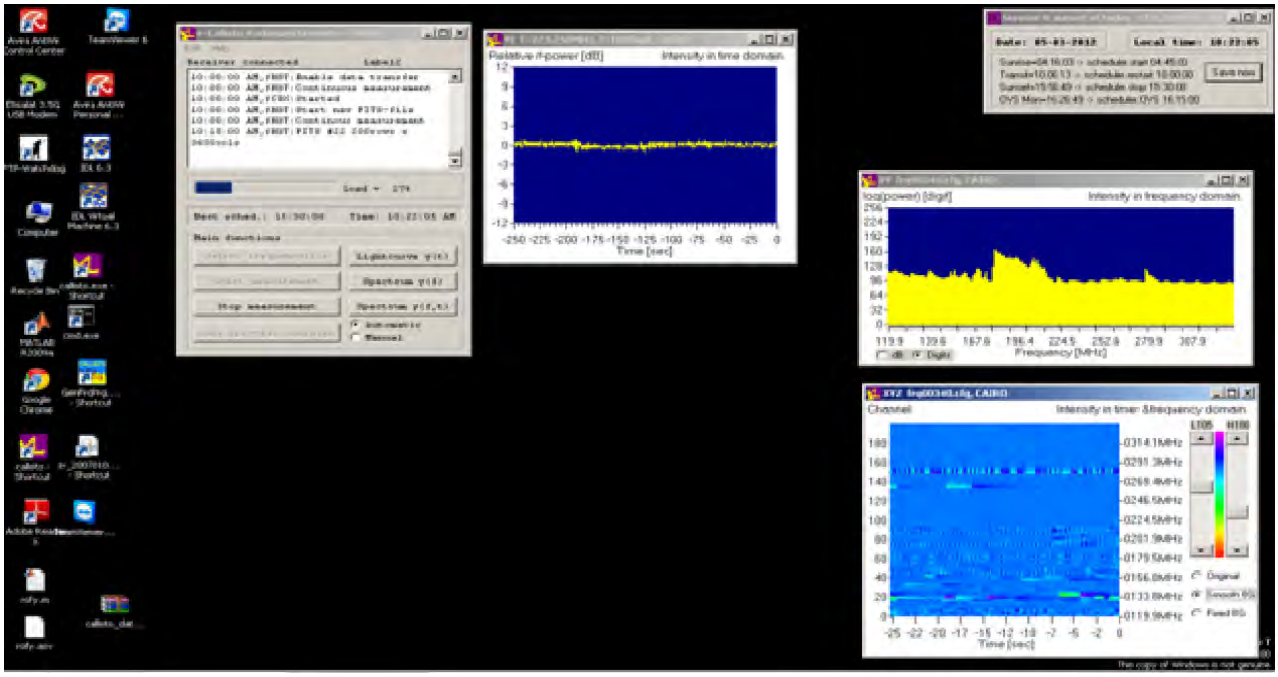
Fig9

We fixed the plastic tubes &the Al. bars in the roof, as to be fixed, also we applied 3-roped from different position in order to fix it from everywhere so it will resist the wind.

Installing the Antenna on the Roof

Fig 10

Photo from Callisto PC, experimental run for 2- day



The First Results

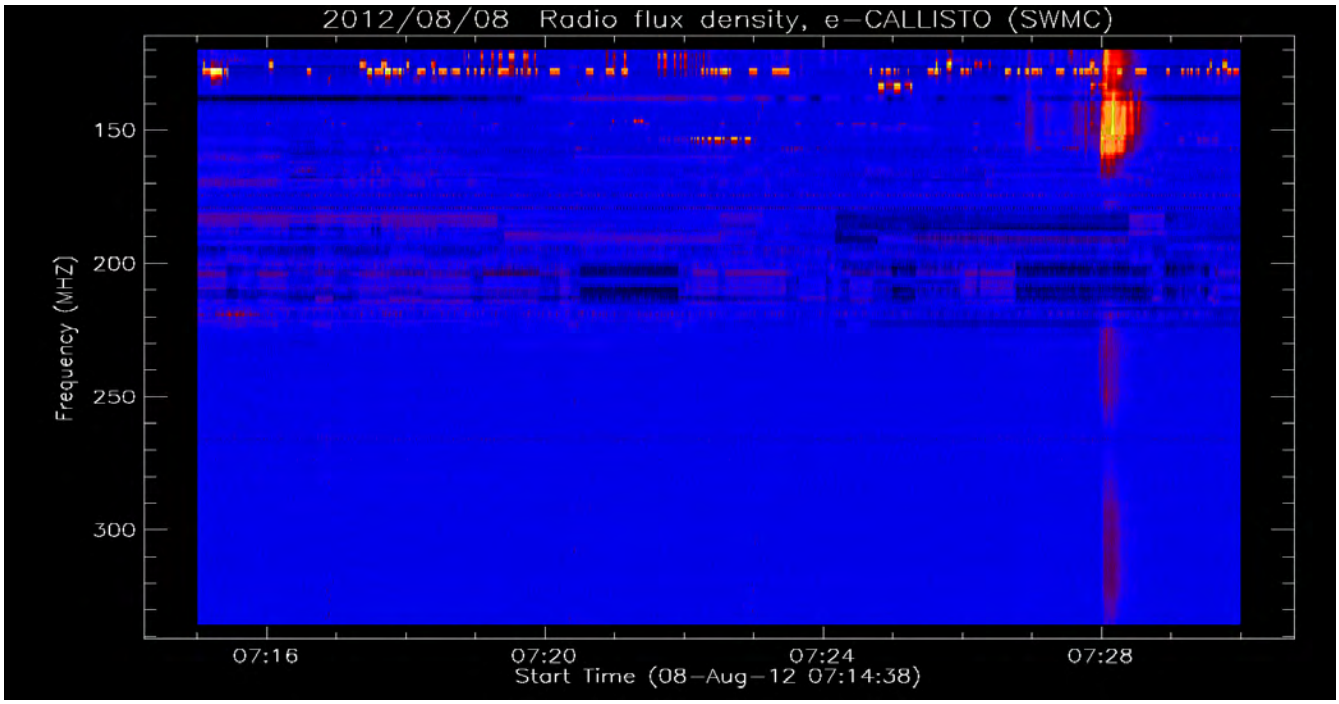


Fig:11a

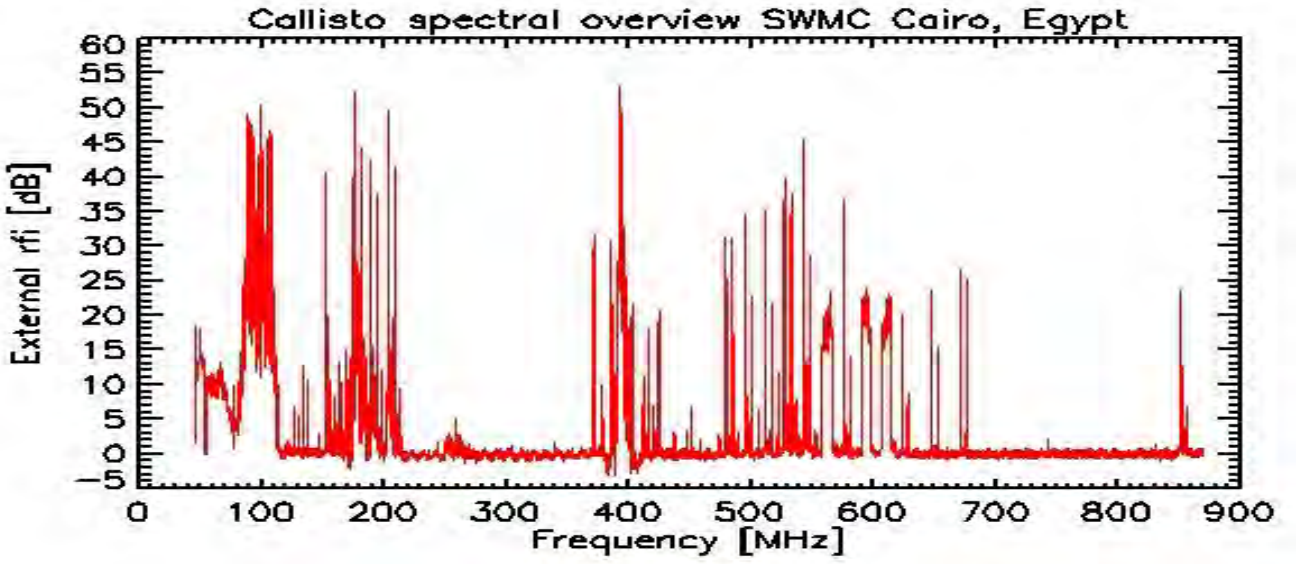


Fig:11 b

Our station is ready to be member in e-Callisto family.

Photo at SWMC

On the left Dr. Ayman Mahrous the director of SWMC ,Prof Eng Salah Ahmed (my father) responsible for installing the Antenna, Ms. Heba Ahmed master student responsible for Callisto station in Egypt & Teacher Assistant in American university in Cairo(AUC), photo by Dipl -Ing. Christian Monstein (senior radio engineer, Swiss Federal Institute of Technology, ETH Zurich.

On the left Mohamed Nedal (undergraduate student),Ahmed nabil (undergraduate student),Dr. Ayman Mahrous (Director of SWMC), Dipl-Ing. Christian Monstein (senior Radio Eng.), Ms Heba Ahmed(Teacher assistant at American university in Cairo, responsible of Callisto project at Egypt),Kaled Aly (Undergraduate student), Antwan (undergraduate student), Amr fahmy (undergraduate .student in computer science).

This photo was taken in front of the Space Weather Monitoring Center at Helwan University, Egypt.