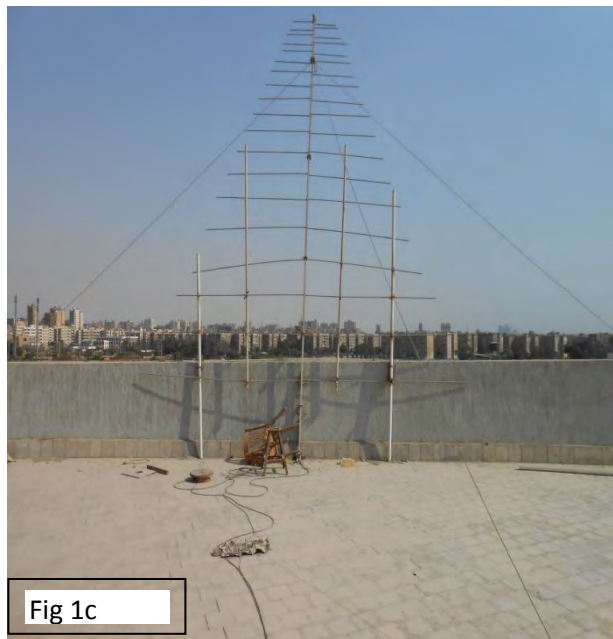
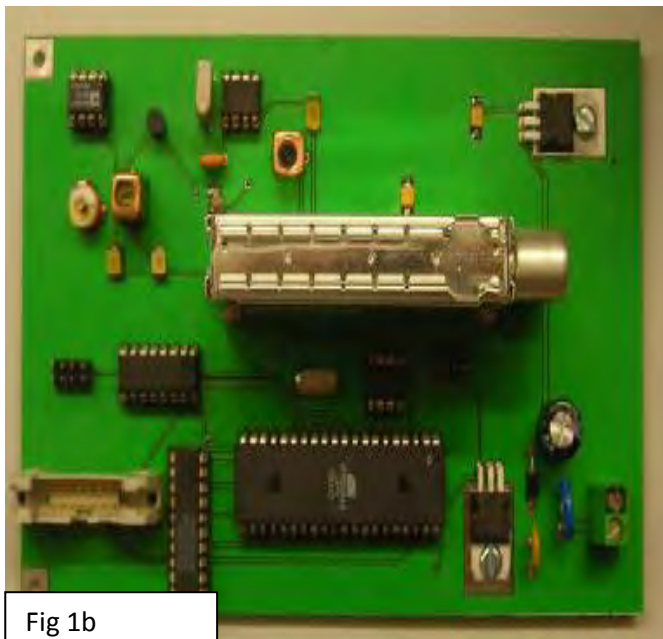
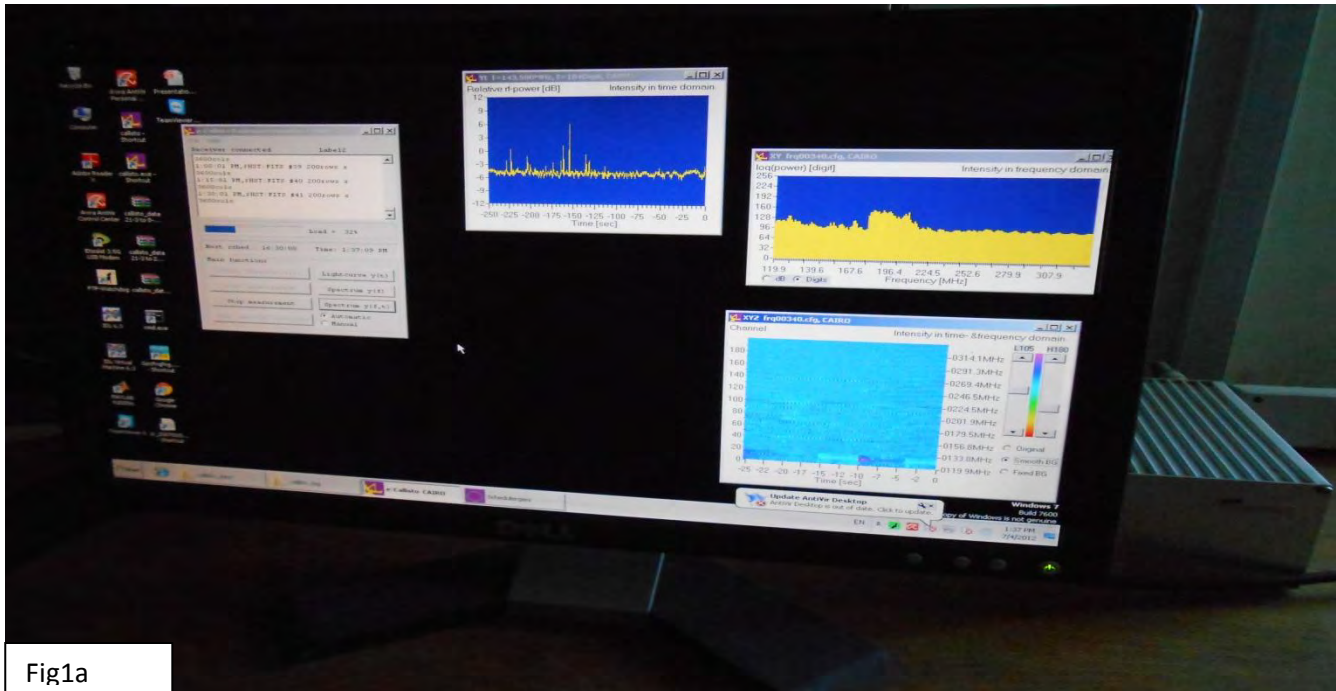


This pdf was circulated in
Volume 4, Number 98,
on 21 August 2012.

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.

University, Egypt.



Antenna specification

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



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).

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

*19th to the top is 6.7 cm.

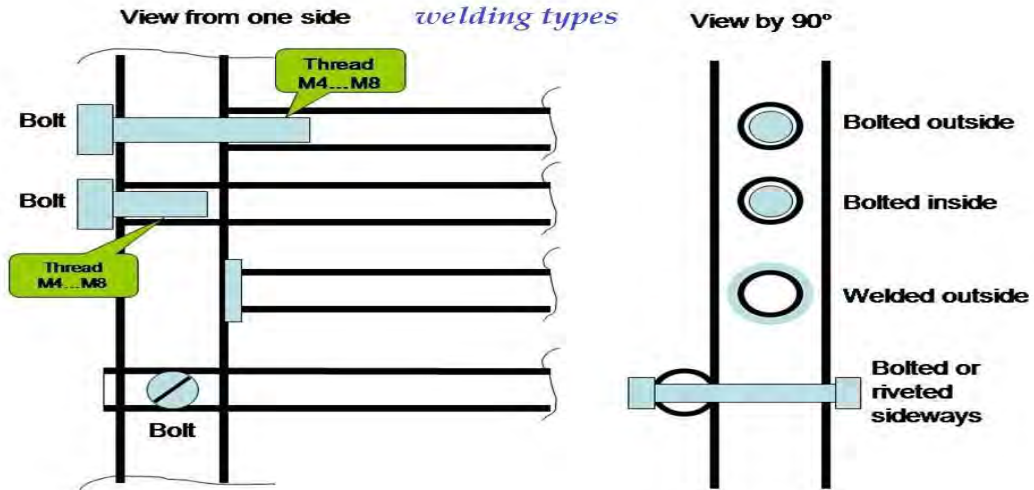
- **Note:** do not forget to add 2-plastic tubes diameter 4 Or 5 cm. for the first 7- elements attached to the boom as they are too long and too heavy for the boom so the need to be supplied .
- **Don't** forget to add other 2- plastic tubes 5 cm diameter 295 cm long on both sides.



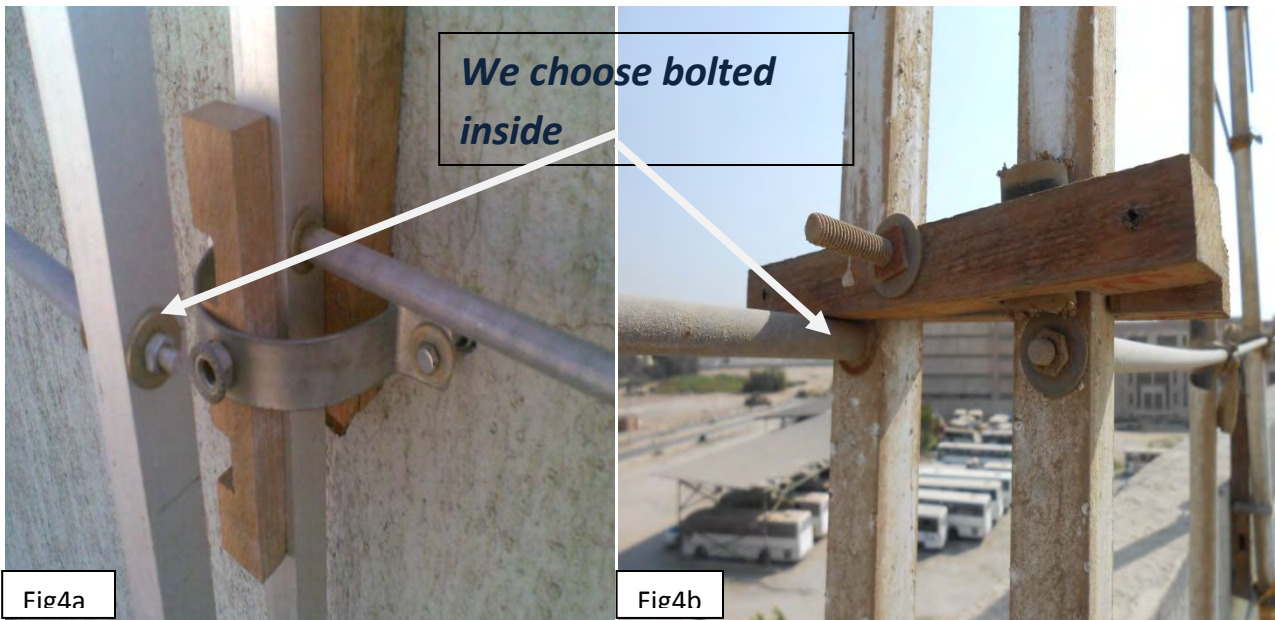
Fig3

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. Moerstein, 2011-09-20



Construction and collection



Fig5a



Fig5b



Fig 5c

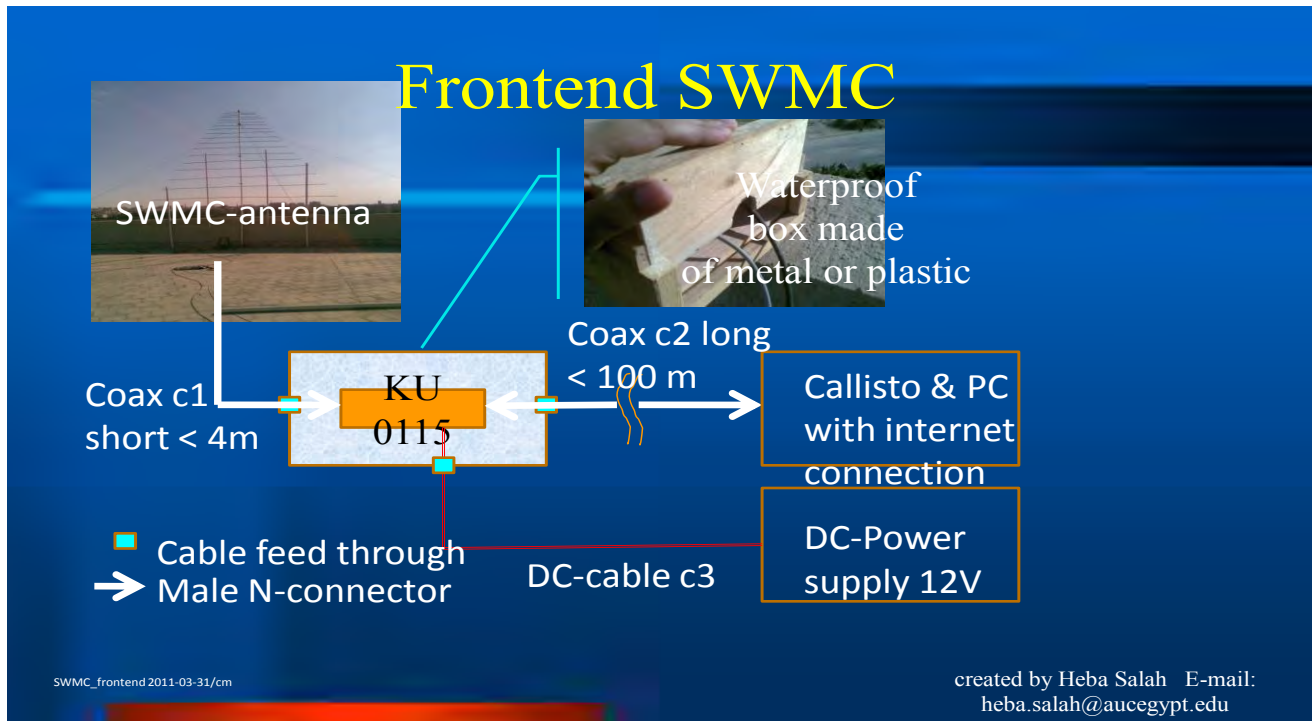


Fig5d



Fig 6

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



Preparing for installing



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



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.



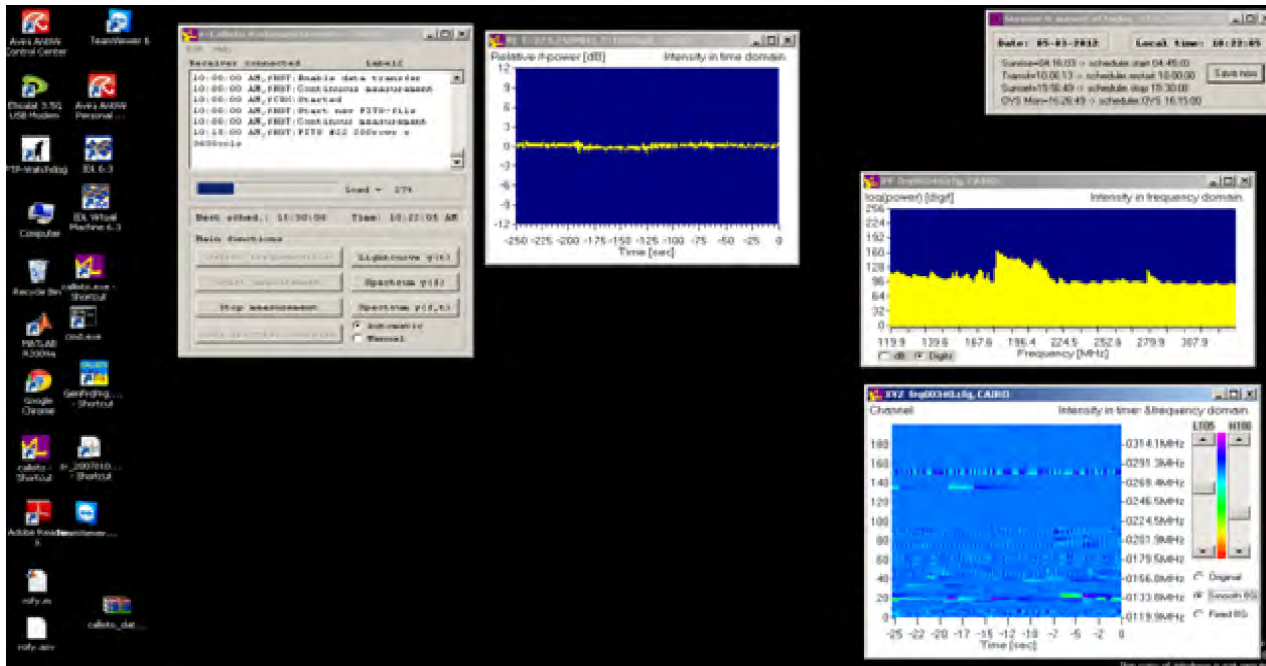
We fixed the plastic tubes & the Al. bars in the roof, as to be fixed, also we applied 3-roped from different position in order to fix it from everywhere so it will resist the wind.

Installing the Antenna on the Roof



Fig 10

Photo from Callisto PC, experimental run for 2- day



The First Results

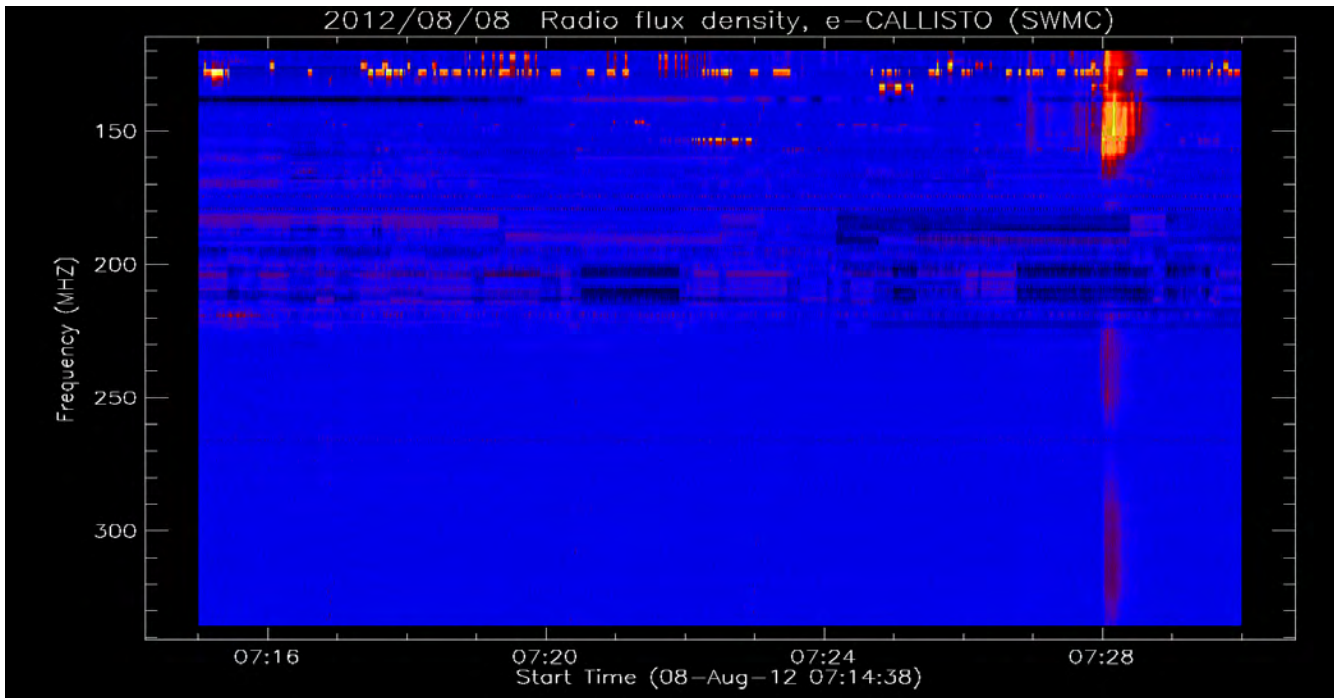


Fig:11a

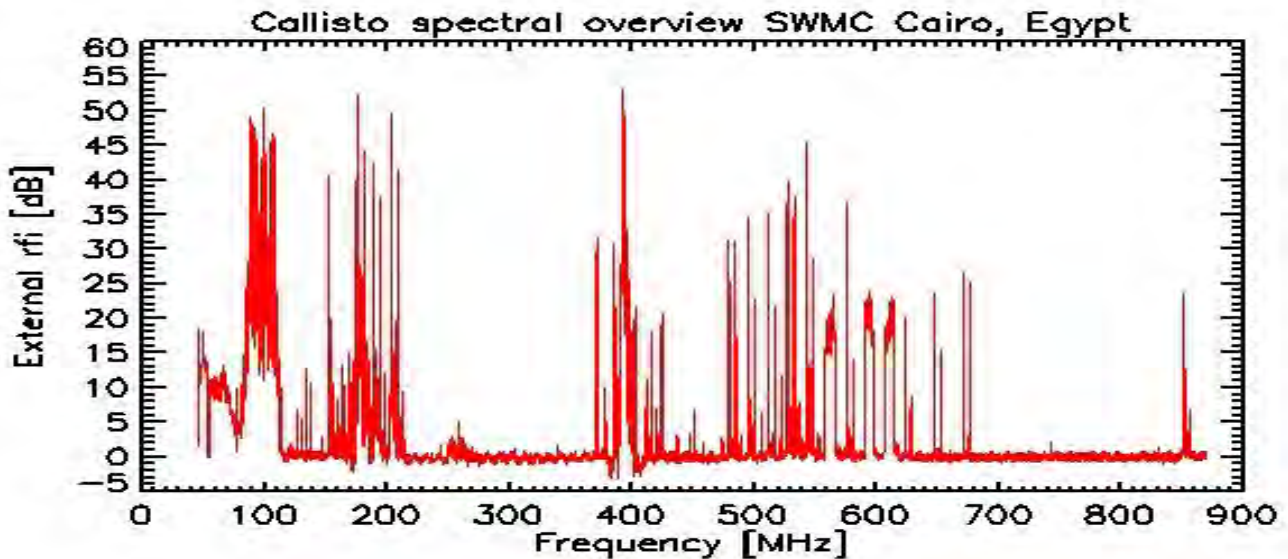
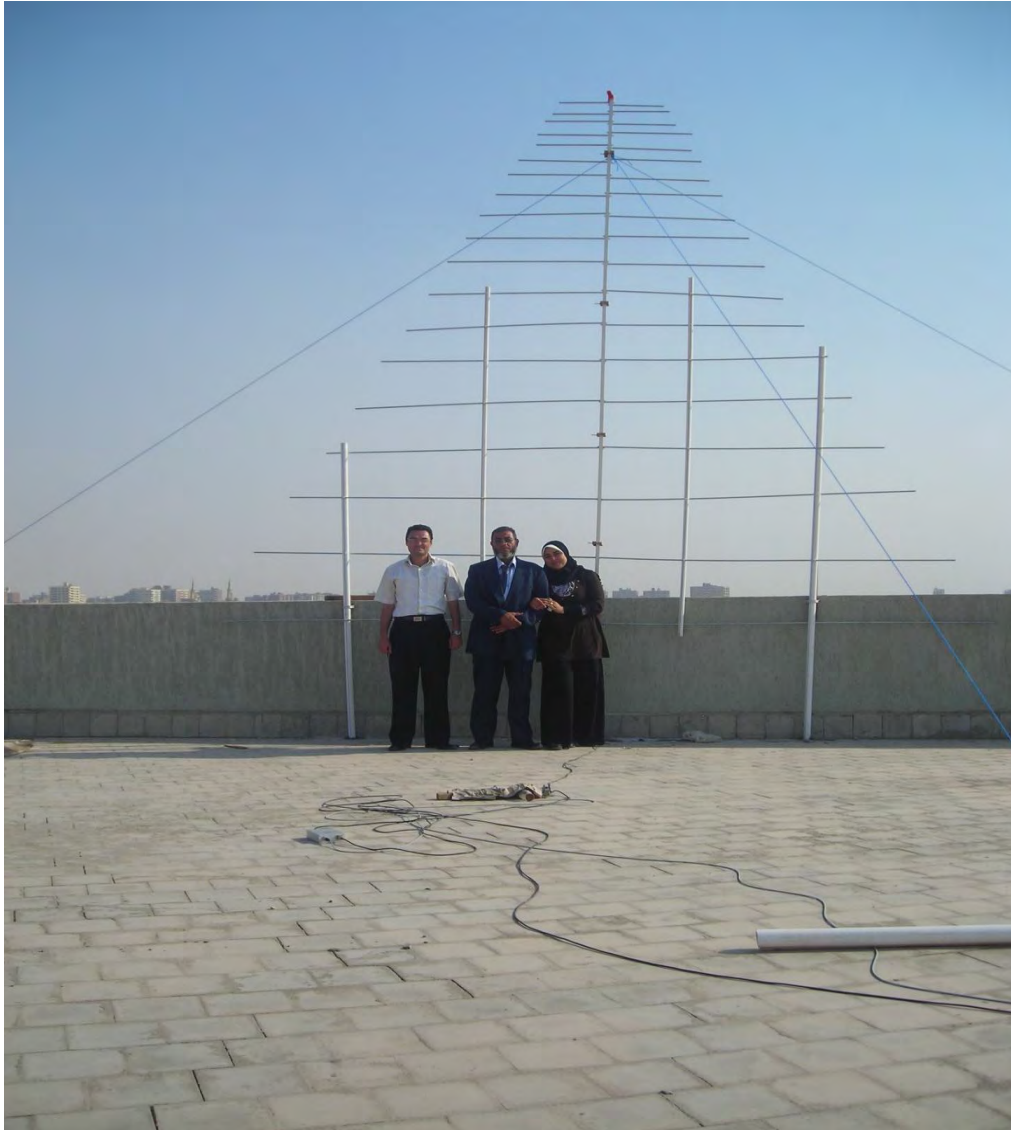


Fig:11 b

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.