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Eidgenössische Technische Hochschule Zürich
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Northwestern Switzerland

CALLISTO status report/newsletter #63

New station commissioned in Austria

Recently a new Callisto solar radio-spectrometer has been set into operation at observatory ANTARES in Michelstadt, Austria. Due to the fact that the observatory is on top of a hill, the instrument is suffering from interference given the good sight to all surrounding transmitters. We are currently trying to filter a smaller part of a clean spectrum. Congratulation to this achievement and welcome on board of e-Callisto.

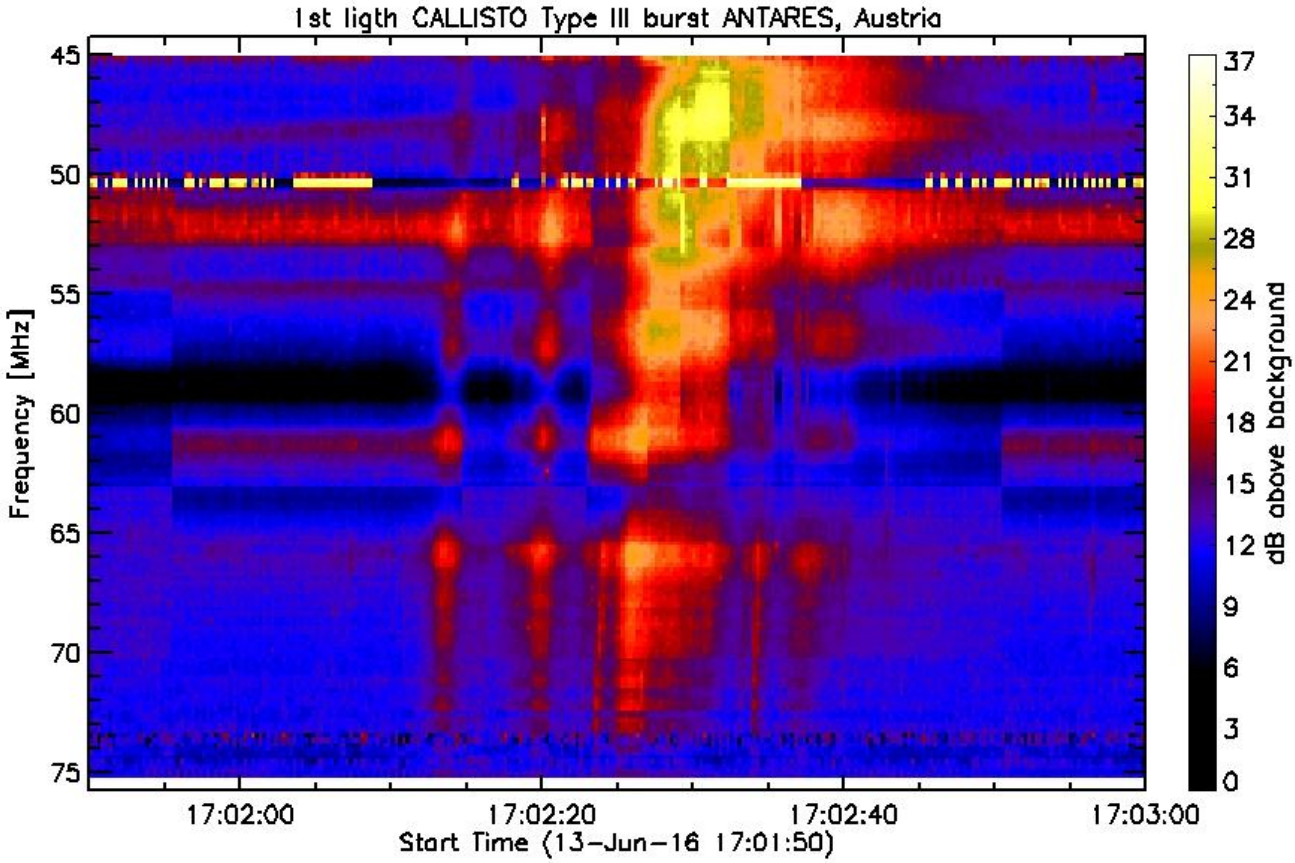


Fig. 1: First light, a type III burst at observatory ANTARES, Michelstadt, Austria.

ANTARES NOE AMATEURASTRONOMEN, Hadrianstrasse 16, 3100 St. Pölten
NOE VOLKSSTERNWARTE 3074 MICHELBACH
Geografische Koordinaten N 48 05 16 - E 015 45 22
antares-info@aon.at
http://www.noe-sternwarte.at

New antenna tracker at Hurbanovo, Slovakia

During vacation we made a short visit at station Hurbanovo in Slovakia. Ivan Dorotovic managed to improve the Sun-tracker as well as the frontend which is now much closer to the antenna and consequently the instrument gained sensitivity (much lower system temperature).

Fig. 2: LPDA with Suntracker at Hurbanovo observatoy, Slovakia. Declination is changed manually about once a month.

New station commissioned in Tomohon, North Sulawesi, Indonesia

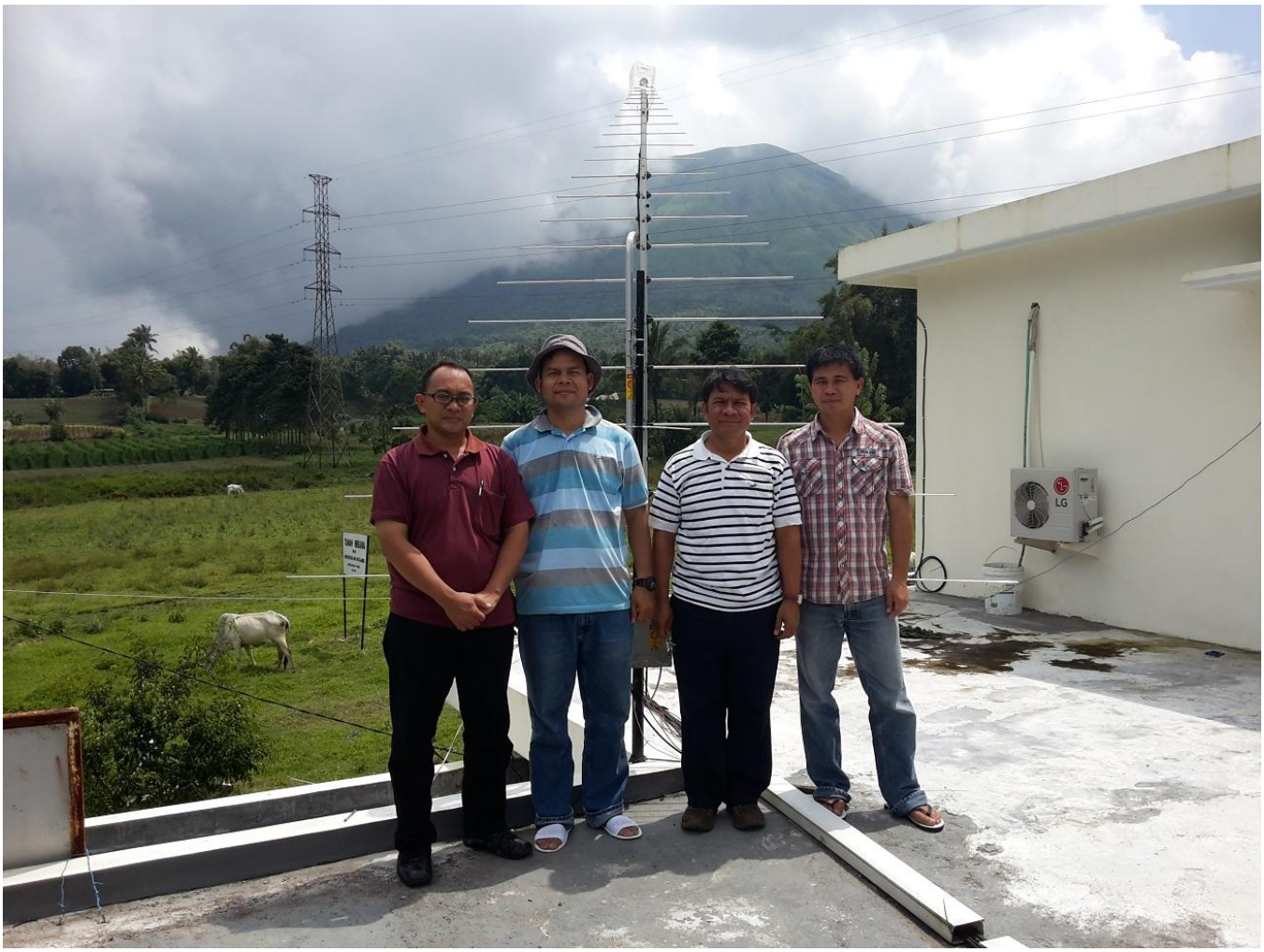


Fig. 2: Space weather team in front of the vertically erected LPDA in Tomohon, North Sulawesi, Indonesia

Comments by Timbul Manik, Indonenia:
We finished installation of a new Callisto in Tomohon North Sulawesi Indonesia.
Location name : Tomohon Indonesia.
Latitude : 1° 20' 41.05" N, Longitude : 136,1011 E, Altitude : 800 m above sea level.
Local time : UT+8
Antenna : Commercial CLP5130-1N, pointing to zenith.
We started measurement of RFI since 13 June 2016, without LNA and then installed the antenna system with LNA at the roof of the building. We conducted RFI measurement for sky and ref on the same day and continuous on certain time. We use LNA ZX60-33LN-S+ with noise figure 1.1 dB, Voltage 5 volt. The similar LNA also used at Sumedang and Biak Station. I didn't measure ambient temperature near the termination resistor, but Tomohon located at mountain area, at the slope of Mt. Lokon, with Air conditioner at the room. So I estimate temperature is around 20-24 °C.

Based on RFI measurement, interference with FM is there, but it is not crowded, so we selected frequency of 45-870 MHz for preliminary operation, 06.00 LT (22 UT) - 18 LT (10 UT). We set system for data transfer, and we connected to FHNW server using Perl, but it is not launched yet. We will launch it soon after this report, and send all the data since the beginning of the normal operation.
Name of the Callisto in Tomohon is : INDONESIA, with focus code : 61.
Please find ovs data of RFI measurement at Tomohon on 13 June 2016, for sky (09.32UT without LNA, 13.00 UT with LNA) and ref. Hope this will help for rfi monitoring as you asked on the other email.
I also send ovs from Sumedang station measured last year. Sky (201502200501 UT) and ref (201502202300 UT). Ambient Temperature at Sumedang is around 25-27 °C, without Air Conditioner. I hope you keep RFI measurement Data from Biak. Ambient Temperature at Sumedang is around 22-25 °C. The room is with Air conditioner. I attach photograph on the installed antenna. Background is Mt. Lokon North Sulawesi.
I hope the operation of Callisto in Tomohon will be smooth and continuously.
Thank you. I look forward to hear from you.

New frontend at MEXART in Mexico

Comments by Victor De La Luz:
Thanks to the Callisto-mexart team, today we restarted operations. Unfortunately the computer of Callisto crashed the last week, but we take advantage of the disruption in the data acquisition to upgrade the system.
Now, we have a TMA1, a new basement, and a new computer in the MEXART station. We are sending an image as attachment.
We are testing the scripts to automatic upload the data to e-Callisto server.
We will make the requested observations as soon as possible to the global analysis requested the last days.

Note: The rain season started in Mexico so we have a lot of records of lightning close to the Callisto-mexart station.
Remark: TMA1=Tower Mounted Amplifer

Fig. 3: LPDA Mexico

New LPDA in Montevideo, Uruguay

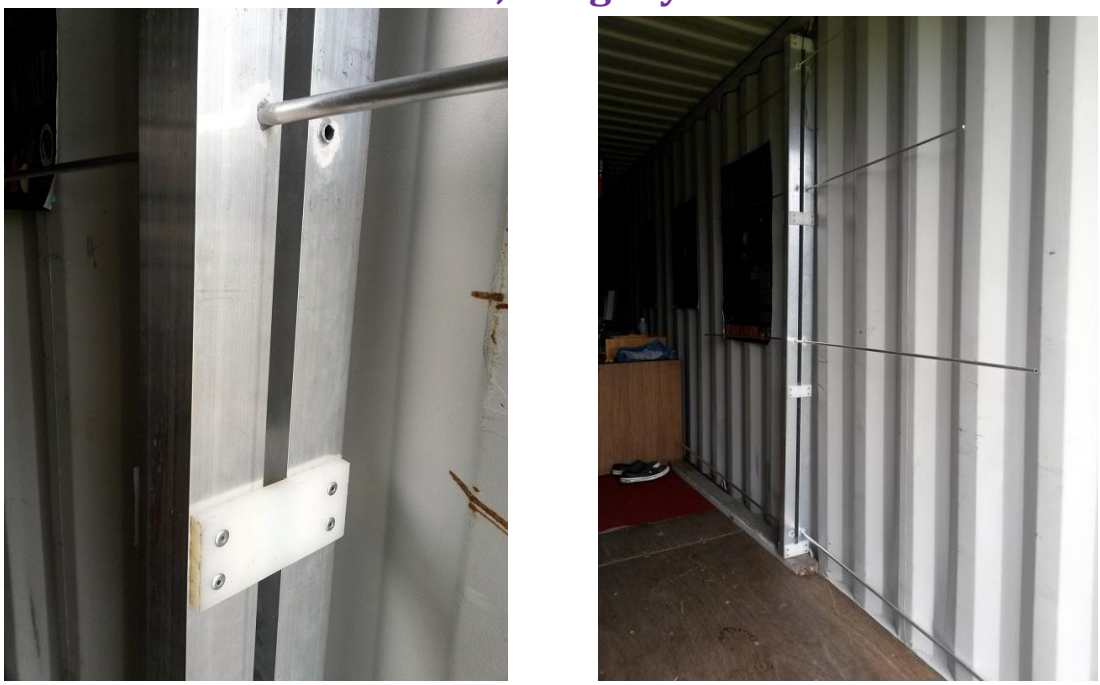
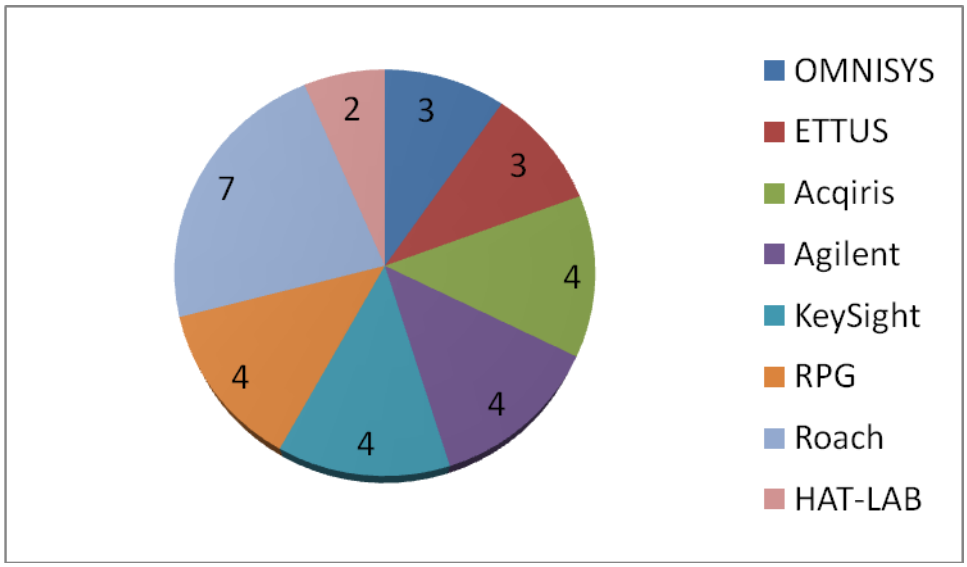


Fig. 4: Self built LPDA in the workshop in Montevideo

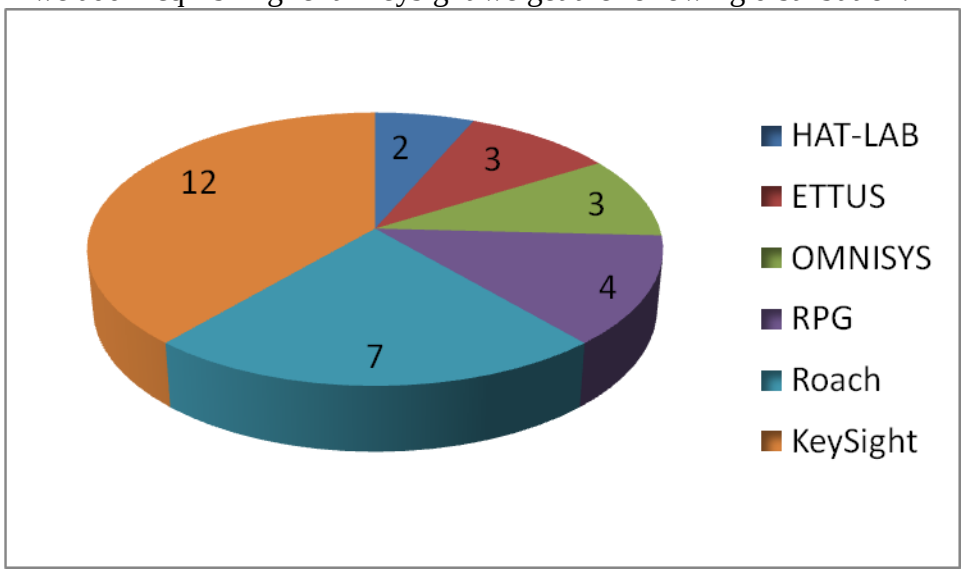
Comments by Santiago Roland:
We are waiting for the 50m of LMR-400 coax and start taking measures. Next week we are installing an internet radio link 30Mbps/10Mbps to the server rack and will configure the PC to be placed inside. We may be have to connect the PC to the LMR-400 with a more flexible coax, like RG-213, any suggestions? I think LMR-400 is to rigid to make it through the room and rack, have you any experience in this issue?
We gave electrical continuity to the elements using a kind of a new aluminium soldering bar, we'll polish it to a better finish. I send you pictures of the finished antenna.

Survey about Digital Backends

On June 5th 2016 a Google-survey was sent out to 18 members of CRAF and 163 members of the CALLISTO network, in total to 181 potential users of digital backends. The analysis was closed two weeks later on June 18th. During this time 32 users (17.7%) responded to the survey.
81.3% of the responders are using digital backends while 18.7% use other spectrometers.
50% of the users of digital backends designed their own systems while 50% procured commercial products.
For those who procured commercial products, here the detailed distribution:



If we add Acqiris+Agilent+Keysight we get the following distribution:



AOB

- New contact with Addis Ababa, Ethiopia
- New request from Hyderabad and Kolkata
- After a lightning stroke we send a new LNA to RCAG, Ulaan Baatar, Mongolia
- After a lightning stroke we sent two new LNA to Almaty, Kazakhstan
- Remember space weather workshop in Sangli/India: http://www.iiap.res.in/meet/school_meet/index.php
- In case you plan to publish a paper based on e-Callisto data, please invite the observer and me as the PI of the network for co-authorship. This, according to the UN/ISWI resolution addressed during the last UN/Japan workshop at Fukuoka university.
- CALLISTO or Callisto denotes to the spectrometer itself while e-Callisto denotes to the worldwide network.
- General information and data access here: http://e-callisto.org/
- e-Callisto data are hosted at Fachhochschule Nordwestschweiz (University of applied sciences FHNW) in Brugg/Windisch, Switzerland. Process control, user communication and scripts are conducted at institute for Astronomy, ETH Zurich.

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On the other hand if you think someone else might be interested in this kind of info, please let me know his/her
email-address to be added to the data base.

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