

## CALLISTO status report/news letter #50

### New station commissioned in Ermenswil / Switzerland

Pascal Keller, a student during his exams for general qualification for university entrance, recently set up a Long Wavelength Array (LWA) antenna and a Callisto system to observe solar radio burst activity in his back yard (figure 1) in Eschenbach, Switzerland. The antenna, spectrometer and software were provided on loan by Institute for Astronomy, ETH Zurich. On the first observation day he observed his 1<sup>st</sup> light, a type II solar radio burst and some type III bursts. His aim is now to compare this LWA observation with others from the e-Callisto network, which is composed of different antenna types and different antenna sizes as well different locations worldwide. One out of his first observations on 6 June 2014 is presented in figure 2 and associated table 1. His files can be identified with the header "eC71\_2014\*\_\*\_59.fit.gz" in the e-Callisto data archive here: <http://soleil.i4ds.ch/solarradio/callistoQuicklooks/>



Figure 1 ~ An LWA antenna installed in the backyard of student Pascal Keller in Eschenbach, Switzerland. Image by courtesy of Pascal Keller.

Callisto Eschenbach Type III solar radio burst group

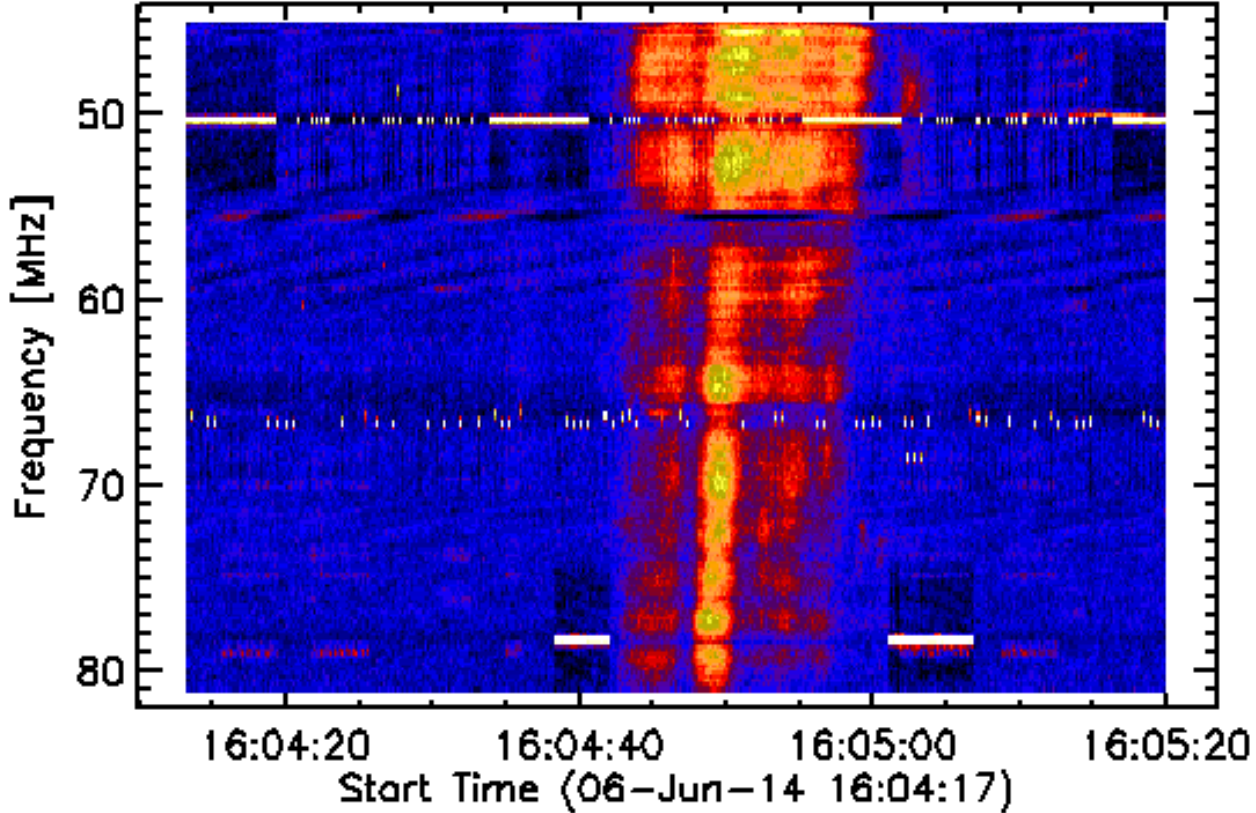


Figure 2 ~ 1st light in Eschenbach, a type III solar radio burst around 16:04 UT. Horizontal structures are local interference from short wave transmitters. Blue stands for low signal while yellow denotes to high signal level. White denotes to extremely high level of interference. Plot: Chr. Monstein.

Table 1 ~ Space Weather Prediction Center Event Data for solar event on 6 June 2014

(<http://www.swpc.noaa.gov/ftpdirectories/indices/events/20140606events.txt>)

#Event	Begin	Max	End	Obs	Q	Type	Loc/Frq	Particulars	Reg#
1540	1654	////	1655	SVI	C	RSP	025-083	III/1	

For a description of the information shown above, see:

<http://www.swpc.noaa.gov/ftpdirectories/indices/events/README>

**Welcome Pascal on board of the e-Callisto network!**

## New antenna commissioned at Bleien Observatory / Switzerland

Recently an old BICONE antenna was replaced by a modern Long Wavelength Antenna (LWA) designed for low frequency observations. The old one was suffering from water entering the impedance matching transformer followed by a loss of sensitivity. The new LWA proved to be very sensitive. Already on the first day we got a large variety of solar type III bursts with very good data quality (high signal to noise ratio SNR and low level of interference).



Figure 3 ~ LWA at Bleien observatory. Chicken wire mesh acts as a ground reflector. Currently only one polarization is operational. In the future it is planned to upgrade for a second polarization combined via a  $90^\circ$  quadrature hybrid to get circular polarization LHCP and RHCP. This to test a new FFT-spectrometer in terms of SFDR, dynamic range, polarization cross-talk, sensitivity, stability etc. The antenna was installed by apprentice Alexander Zvyagin during his 3rd year educational exercises. Image by Chr. Monstein.

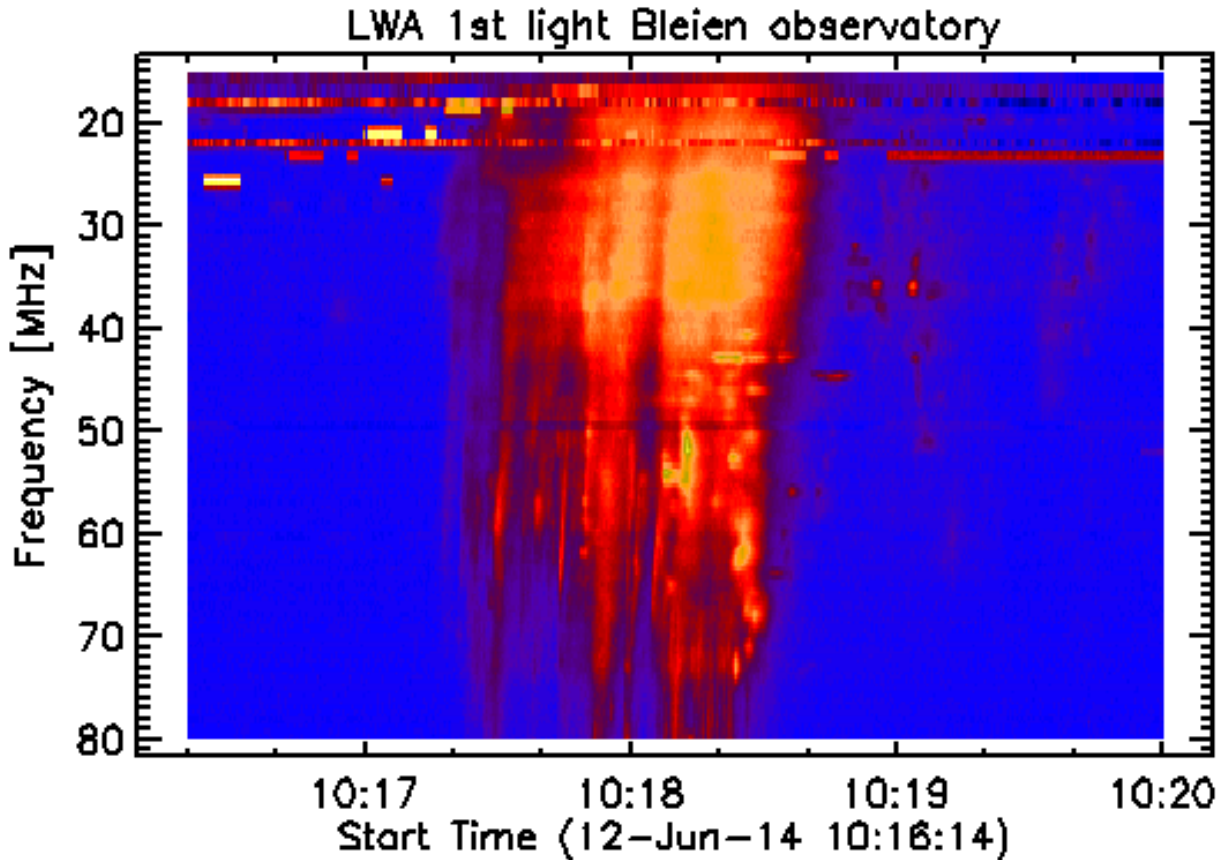


Figure 4 ~ 1st light at Bleien observatory with the LWA, a small group of type III solar radio bursts around 10:18 UT. Horizontal structures are local interference from short wave transmitters. Blue stands for low signal while yellow denotes to high signal level. Plot: Chr. Monstein.

Table 2 ~ Space Weather Prediction Center Event Data for solar event on 12 June 2014

(<http://www.swpc.noaa.gov/ftpdirectories/indices/events/20140612events.txt>)

#Event	Begin	Max	End	Obs	Q	Type	Loc/Frq	Particulars	Reg#
3260 +	1017	////	1019	SVI	C	RSP	025-180	III/2	2087

For a description of the information shown above, see:

<http://www.swpc.noaa.gov/ftpdirectories/indices/events/README>



## Perl script available for FTP and backup

A new designed PERL script is available on our website which provides direct access to the FTP-server at FHNW (avoiding FTP-Watchdog which is no longer available for free). The script in addition moves the FIT-files into a archive which can be configured. A short manual (written by W. Reeve Anchorage) is available on the same website.

Access here: <http://www.e-callisto.org/Software/Callisto-Software.html>

Search for 'PERL script'.

### LWA are available here:

<http://www.reeve.com/RadioScience/Antennas/ActiveCrossed-Dipole/ActiveBalunOrderInfo.htm>

### AOB:

- The domain of the current FTP-server [ftpexchange.imvs.technik.fhnw.ch](http://ftpexchange.imvs.technik.fhnw.ch) at university of applied sciences in Brugg/Windisch will be taken out of service. Those of you who actively send their FITS-files via FTP-Watchdog or with their own tool to this server, they should **now change** the adress of the server to the new address [ftpexchange.cs.technik.fhnw.ch](http://ftpexchange.cs.technik.fhnw.ch) Username and password are still the same.
- 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.

Please do **not** respond to the email-address of the list-server, respond instead directly to me (address below). If you do not want to receive this news-letter please send me an email and I'll take your address out of the data base. 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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