CALLISTO status report/newsletter #97

Proposal:
CALLISTO Instrument Workshop
UN Vienna during February 5-9, 2024

Day 1/2 mainly hardware related

Time	Topic	Presenter
08:00-09:00	Registration at Gate 1, VIC	All
09:00-09:30	Opening and welcome, organisational remarks	Gopal?, Shafa?
09:30-10:00	CALLISTO and the e-Callisto network	Monstein
10:00-10:20	Coffee break	
10:20	**Session 1:**	
10:20-10:40	Antennas: LPDA, LWA, MWA, simple dipole, dish etc.	
10:40-11:00	Low noise amplifier gain, noise figure, protection	
11:00-11:20	Frontend electronics FEE replacement	
11:20-11:40	Calibration unit, calibration sources	
11:40-12:00	Spectrometer CALLISTO	
12:00-12:20	Spectrometer (progress in SDR)	Bussons?
12:20-12:40	Computer, controller Windows issues	
12:40-13:40	Lunch break	
13:40	**Session 2:**	
13:40-14:00	Power adapter issues, UPS	
14:00-14:20	Coaxial cables (loss, impedance, shielding…)	
14:20-14:40	Lightning protection	
14:40-15:00	TBD	
15:00-15:20	TBD	
15:20-15:40	Coffee break	
15:40	**Session 3:**	
15:40-16:00	Operating instrument	
16:00-16:20	Maintenance (Antenna, Spectrometer, PC)	
16:20-16:40	TBD	
16:40-17:00	Discussion	
17:00	Adjourn	

Day 2/2 mainly software related and data analysis

Time	Topic	Presenter
09:00	**Session 4:**	
09:00-09:20	Application software installation and configuration	
09:20-09:40	Generation of a frequency file	
09:40-10:00	Data upload via FTP and data download	
10:00-10:20	Generate daily light curve in real time for web-presentation	
10:20-10:40	Ethics in case of publications	
10:40-11:00	Coffee break	
11:00	Session 5:	
11:00-11:20	Plot FIT-file spectra in Python	
11:20-11:40	Plot light curve out of FIT-file in Python	
11:40-12:00	Plot spectral overview in Python	
12:00-12:20	Burst type and rfi-types, how to distinguish	
12:20-12:40	Estimate Y-factor of bursts and rfi	
12:40-13:40	Lunch break	
13:40	**Session 6:**	
13:40-14:00	Calibration issues, cross-calibration, pseudo-calibration	
14:00-14:20	Measure gain/loss/impedance matching with NanoVNA	
14:20-14:40	Intro to LINUX-versions	
14:40-15:00	Data archive and processes at FHNW in Switzerland	
15:00-15:20	TBD	
15:20-15:40	Coffee break	
15:40-16:00	Wrap–up Session and concluding Remarks	Shafa?
16:00	End workshop	All

We many times discussed the need for an instrument related workshop in addition to several scientific workshops which have been taken place in Ethiopia, Rwanda, India etc.
Our plan is a two-day workshop, instrument related in the date-range February 5-9, 2023.

Location: VIC in Vienna, together with an instrument exhibition in the rotunda of VIC
Funding: not clear yet, need to be discussed with people from UNOOSA and others.

But one thing is clear, I cannot do everything myself as I'm 70 now and do hardly get younger ...
Need volunteers to give talks and presentations as suggested in the above very draft proposal.
There are still some TBDs for additional talks, please send in any idea you might be interested in.
If you are interested in such a workshop at all (in person or remote), please respond to:
monstein@irsol.ch

If you are interested to cover one or the other topic above (in person or remote), please respond to:
monstein@irsol.ch

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Callisto@lists.phys.ethz.ch is a robot/computer and does not answer questions.

e-Callisto burst statistics August 2023

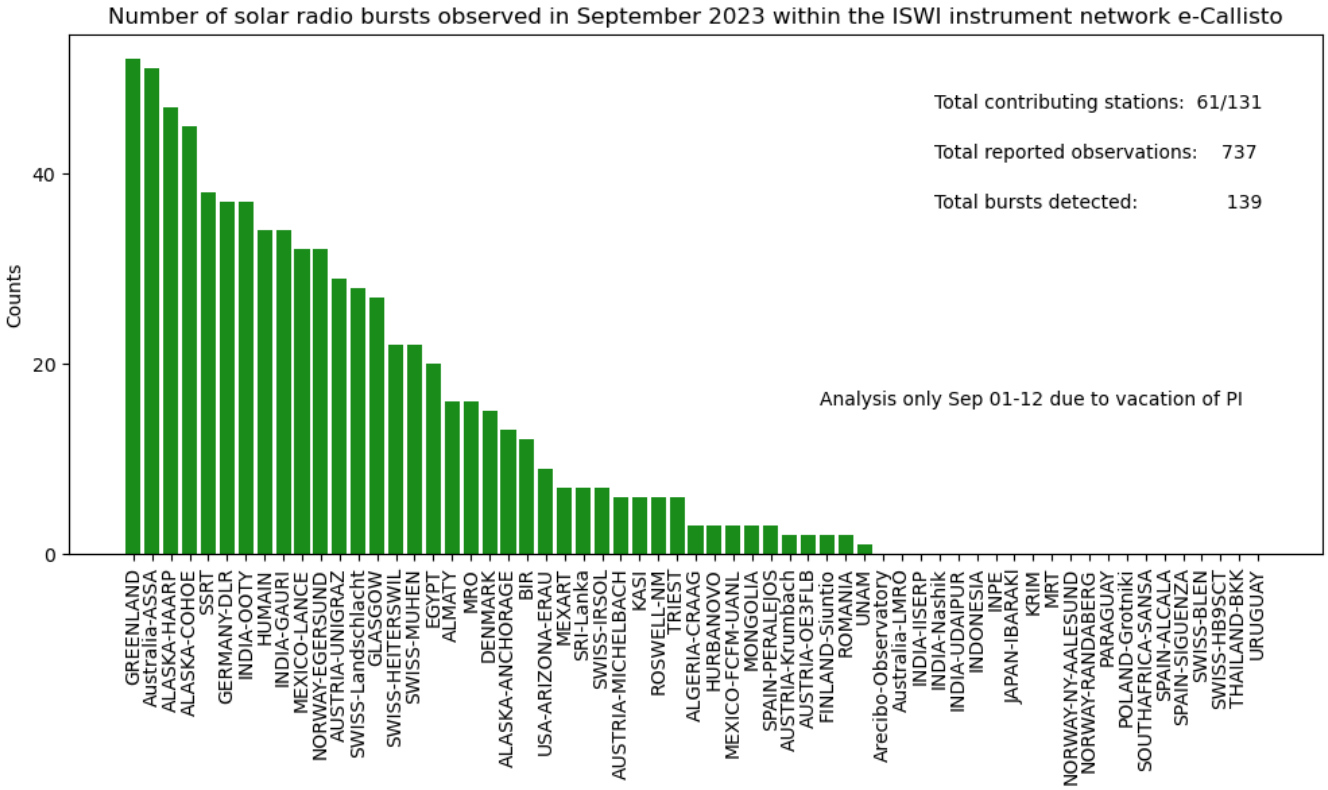

Fig. 7: Compilation of all visually detected bursts from all Callisto-stations which provide data to the e-Callisto network. There are clear 'winners' of the 'competition', GREENLAND, Australia-ASSA and ALASKA-HAARP. Due to vacation of the PI only part of the month was analysed, therefore only few bursts listed.
Still eagerly looking for an AI-solution to automatically generate a burst-list and to save many hours day by day to perform this rather boring job visually.

Papers:

@article{POHJOLAINEN2023,
title = {Separating the effects of earthside and far side solar events. A case study},
journal = {Advances in Space Research},

year = {2023},
issn = {0273-1177},
doi = {https://doi.org/10.1016/j.asr.2023.09.009},
url = {https://www.sciencedirect.com/science/article/pii/S0273117723007317},
author = {Silja Pohjolainen and Nasrin {Talebpour Shesvan} and Christian Monstein},
keywords = {Solar eruptions, Coronal mass ejections, Solar radio bursts},
abstract = {On 8 November 2013 a halo-type coronal mass ejection (CME) was observed, together with flares and type II radio bursts, but the association between the flares, radio bursts, and the CME was not clear. Our aim is to identify the origin of the CME and its direction of propagation, and to exclude features that were not connected to it. On the Earth-facing side, a GOES C5.7 class flare occurred close to the estimated CME launch time, followed by an X1.1 class flare. The latter flare was associated with an EUV wave and metric type II bursts. On the far side of the Sun, a filament eruption, EUV dimmings, and ejected CME loops were observed by imaging instruments onboard the Solar TErrestrial RElations Observatory (STEREO) spacecraft that were viewing the backside of the Sun. The STEREO radio instruments observed an interplanetary (IP) type II radio burst at decameter-hectometric wavelengths, which was not observed by the radio instrument onboard the Wind spacecraft located at L1 near Earth. We show that the halo CME originated from the eruption on the far side of the Sun, and that the IP type II burst was created by a shock wave ahead of the halo CME. The radio burst remained unobserved from the earthside, even at heliocentric source heights larger than 9 solar radii. During the CME propagation, the X-class flare eruption caused a small plasmoid ejection earthward, the material of which was superposed on the earlier CME structures observed in projection. The estimated heights of the metric type II burst match well with the EUV wave launched by the X-class flare. As this radio emission did not continue to lower frequencies, we conclude that the shock wave did not propagate any further. Either the shock driver died out, as a blast wave, or the driver speed no longer exceeded the local Alfven speed.}
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CESRA NEWS

A possible new scenario for widespread solar energetic particle events
by Nina Dresing et al.
https://www.astro.gla.ac.uk/users/eduard/cesra/?p=3619

Morphology of solar type II bursts caused by shock propagation through turbulent and inhomogeneous coronal plasma
by A. Koval et al
https://www.astro.gla.ac.uk/users/eduard/cesra/?p=3638

AOB

- If you have some stuff to present to the Callisto community, please let me know

- IRSOL is meant as the new core-station of the e-Callisto network
- To avoid strange issues with Windows computers, disable disc caching. Otherwise configurations files might not be updated in Callisto with the latest information
- Another access to Callisto data here: https://vwo.nasa.gov/

- 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 University of Applied Sciences, Institute for Data Science FHNW in Brugg/Windisch, Switzerland. Additionally, data are available at ESA site here: SSA Space Weather Portal (http://swe.ssa.esa.int/).

- In case you (as the responsible person for operating and maintenance of Callisto) are leaving the institute or, if you are retiring, please send me name and email address of the successor.

Please do **NOT** respond to the email-address of the list-server where you have got this document from, it is a computer/robot. This computer will not give you any useful answer…
Respond instead directly to me at: cmonstein(at)swissonline.ch or monstein(at)irsol.ch

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