CALLISTO status report/newsletter #77

New Callisto station in Udaipur, India operational

During a tour through Rajasthan we installed and configured a Callisto solar radio spectrometer at Udaipur Solar Observatory, a PRL facility. Dr. Bhuwan Joshi and his PhDs/Postdocs are taking care of operating and maintaining the new instrument.
PRL = Physics Research Laboratory, see: https://www.prl.res.in/prl-eng/

Fig. 1: Preparation of LPDA for mounting on a concrete pole at PRL in Udaipur, India.

Welcome Udaipur on the e-Callisto network, an ISWI instrument array.

Fig. 2: LPDA mounted in the background, metallic container hosting Callisto and PC in front. The container is equipped with UPS to keep instruments working even during power outages. And the system has also an air conditioning system (a/c) to guarantee constant stability of the spectrometer.

Fig. 3: Author and Dr. Bhuwan Joshi with Callisto and some Masala Chai (मसाला चाय).

New Callisto station in Pokhara, Nepal operational

During our tour through India and Nepal we installed another Callisto at Tribhuvan University, Institute of Science & Technology, Prithvi Narayan Campus in Pokhara, Nepal.

Fig. 4: Suman Gautam and colleagues assembling the LPDA before mounting it on the roof of the science building.

Fig. 5: Antenna pointing to zenith, mounted on top of the science building in Pokhara.

Fig. 6: Callisto and Windows 7 PC in the science building at Tribhuvan University Pokara with author and Suman Gautam. First rfi measurement were taken. To get 1st light from the may take some time given the fact that we currently are in sun spot minimum....

Welcome Pokhara/Nepal on the e-Callisto network, an ISWI instrument array.

New Callisto station in Spain operational

With help from Universidad de Alcalá de Henares (UAH), Javier Bussons and colleagues have put together a Callisto receiver in Sigüenza (at La Casa del Doncel). The Create antenna was purchased from UKW-Berichte and the spectrometer was provided by the author, both with funding from Universidad de Murcia. The standard software installed by Manolo Prieto (UAH) is now producing light curves, spectra and log-files. Sigüenza is not as good as Peralejos in terms of rfi but they are very well placed when it comes to outreach to the general public, educational and university activities and scientific tourism. Having similar receivers spread about this region (Alcalá, Peralejos, Sigüenza) may also have some advantages. Oleksii Dudnyk (Institute of Radio Astronomy, National Academy of Sciences of Ukraine) who visited Sigüenza recently, he is interested in using Callisto data for the study of sporadic radio emission of the near Earth space.

Fig. 7: LPDA antenna in horizontal polarization, pointing south (roughly). No tracking system available yet.

Welcome Spain (again) on the e-Callisto network, an ISWI instrument array.

New Callisto station in Mongolia operational

Message from Munkhmanlai Davaasambuu from Institute of Astronomy & Geophysics, Mongolian Academy of Sciences in Ulaan Baatar, Mongolia:
We installed second Callisto spectrometer in Dalanzadgad(43° 34′ 0″ N, 104° 26′ 0″ E), Omnogovi, Mongolia.

Welcome Mongolia (again) on the e-Callisto network, an ISWI instrument array.

Updates on Callisto station in Cohoe, Alaska

Cohoe went through several updates regarding antenna, backend, shed and heterodyne receiver.

Fig. 8: Shed at Cohoe in Alaska containing receivers, spectrometers, PC etc.

Fig. 9: Long wave antenna (LWA) in a wooden shed as protection from aggressive moose.

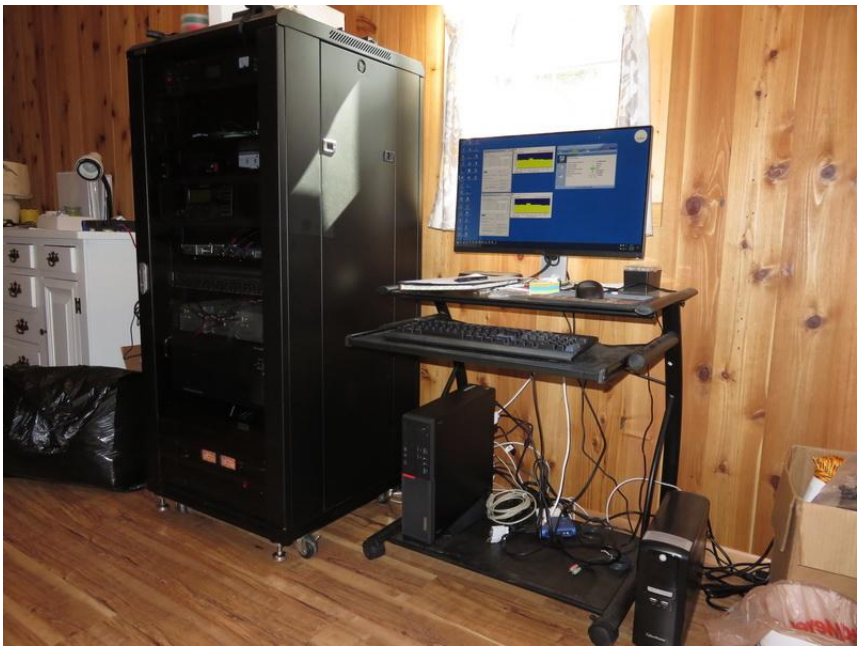

Fig. 10: Rack containing two receivers, spectrometers for circular polarization measurements, UPS and associated hardware.

Welcome Alaska (again) on the e-Callisto network, an ISWI instrument array.

CESRA news

Alternative zebra-structure models in solar radio emission
by Chernov G.P.
http://cesra.net/?p=1980

Meetings with approaching deadlines:

- New Science enabled by New Technologies in the SKA Era, April 8-12 2019
http://indico.skatelescope.org/event/467/

- 2nd China-Europe Solar Physics Meeting (CESPM 2019)
http://oh.geof.unizg.hr/index.php/en/cespm-2019

Non-radial propagation of energetic electrons in solar corona
by A. Klassen et al.
http://cesra.net/?p=1992

Callisto related papers already published or in preparation

https://link.springer.com/article/10.1007/s11207-018-1367-5
https://www.ann-geophys.net/36/1347/2018/angeo-36-1347-2018.pdf
http://iopscience.iop.org/article/10.3847/2041-8213/aad86c/pdf
https://arxiv.org/pdf/1801.03547.pdf
https://www.swsc-journal.org/articles/swsc/pdf/2018/01/swsc170090.pdf

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AOB

- Interest for CALLISTO from Malaysia and Algeria

- Links for LPDA design:
  - http://www.changpuak.ch/electronics/lpda.php
  - http://www.stroobandt.com/lpda/en/index.html

- 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. Additionally, data are hosted at ESA site here:
  SSA Space Weather Portal (http://swe.ssa.esa.int/).
  Click ESC Solar Weather, then eCallisto

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