CALLISTO status report/newsletter #79

1st light observed with Callisto at Udaipur Solar Observatory

After quite a long period of silence the Sun produced a weak radio burst today (March 3, 2019) which was observed among other Callisto stations at Udaipur Solar Observatory in Rajasthan, India.

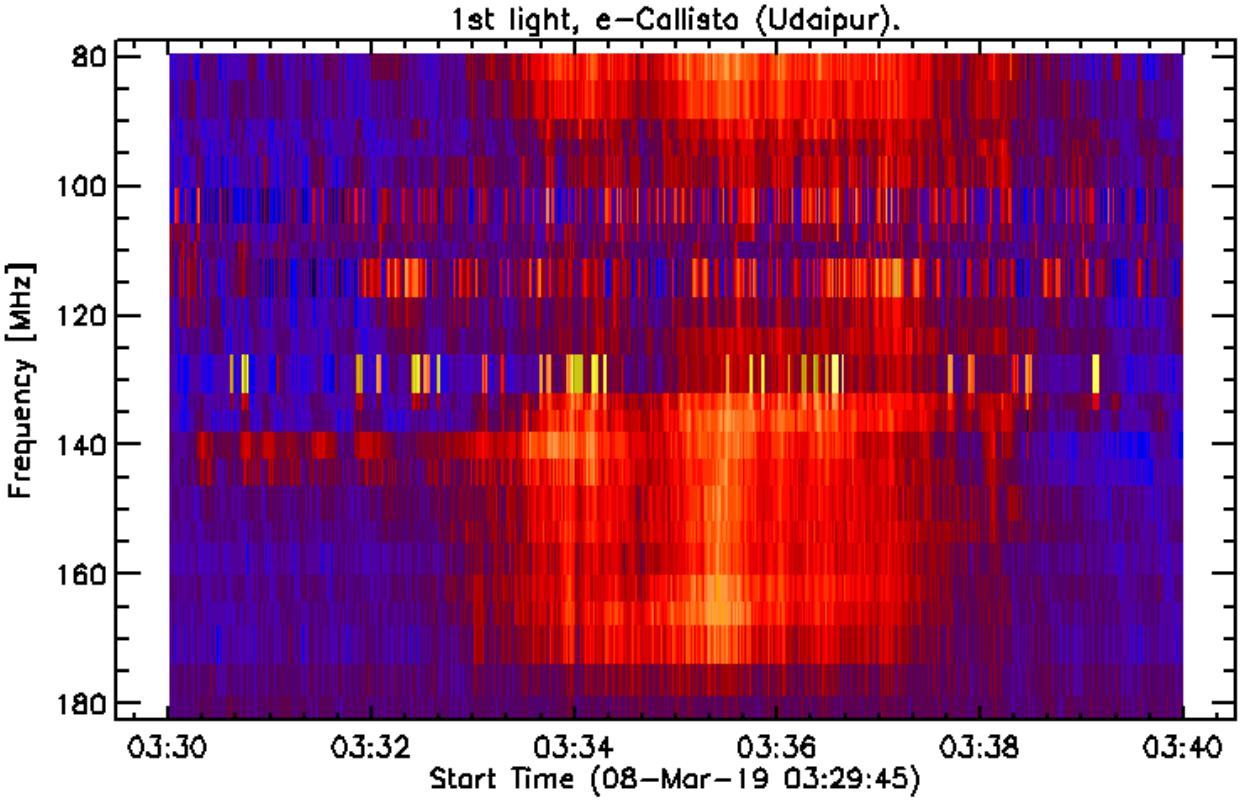

Fig. 1: 1st light, plasma radiation observed by Callisto in Udaipur. Antenna is a LPDA, pointing to zenith. Congratulations to this achievement!

```
:Product: 20190308events.txt
:Created: 2019 Mar 08 1907 UT
:Date: 2019 03 08
# Prepared by the U.S. Dept. of Commerce, NOAA, Space Weather Prediction Center
# Please send comments and suggestions to SWPC.Webmaster@noaa.gov
#
# Missing data: ////
# Updated every 5 minutes.
```

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```
#                          Edited Events for 2019 Mar 08
#
#Event    Begin    Max       End  Obs  Q  Type  Loc/Frq   Particulars       Reg#
#-------------------------------------------------------------------------------

8550 +     0307   0319      0358  G15  5   XRA  1-8A      C1.3    3.0E-03   2734
8550 +     0315   ////      0327  LEA  C   RSP  027-055   II/2    683       2734
8550       0330   ////      0356  LEA  C   RSP  025-180   VII/2             2734
8550       0330   ////      0332  PAL  U   RSP  025-180   III/1             2734
8550       0333   ////      0349  PAL  U   RSP  078-180   V/1               2734
8550 +     0334   0335      0336  LEA  G   RBR  245       140               2734
8550      B0338  U0339      0417  LEA  3   FLA  N09W03    SF      UMB       2734
```

Timing issues

The e-Callisto network has the advantage to observe the Sun 24/7 through all the year. In case a burst has been observed scientists usually want to compare or even to correlate observations from different stations. We found out that several stations do not provide precise time stamps in their data. It is extremely important that all stations operate based on universal time (UT) to allow useful processing of our data. We do neither work based on local time nor do we want to operate with daylight saving time. We are only able to detect data from the future but it is super difficult to detect data from the past because they may have been sent intentionally due to broken internet connection. Wrong timing is a strong indication for bad quality and of course we want to provide best quality data.
We also suggest to synchronize PC-time with an internet time server. Standard update-frequency of time and date in Windows is once per day which is not sufficient for many old/cheap PC's. Therefore, one should change the update rate to at least once per hour or even more often. A description on how to do that can be found here: http://e-callisto.org/Software/Editing%20Windows%20Registry%20for%20Time%20Synchronization.htm

Alternative ways of time synchronization provided by W. Reeve can be found here:
http://www.reeve.com/Documents/Articles%20Papers/Reeve_NTP-MeinMon_Install.pdf
http://www.reeve.com/Documents/Articles%20Papers/Reeve_MeinbergMonGuide.pdf

The first one above is an installation guide for the Network Time Protocol and the Meinberg NTP Monitor program. The second one is a guide for using the Meinberg Monitor. NTP is the best method for NTP time keeping because it runs as a service, is completely automatic and runs on just about any PC. NTP can use time servers accessible by internet anywhere in the world and/or local time servers such as the GpsNtp-Pi: http://www.reeve.com/RadioScience/Raspberry%20Pi/GpsNtp-Pi.htm

In addition, we strongly recommend to check your PC-time-date from time to time, especially after a Windows update and/or after a restart, forced due to power outage. Very often PCs forget time and date after a restart when their clock battery is empty.

FIT-files in the archive with wrong time-stamp are useless

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CESRA news

Simulation of Focusing Effect of Traveling Ionospheric Disturbances
on Meter-Decameter Solar Dynamic Spectra by A. Koval et al*
http://cesra.net/?p=2090

Synthetic Radio Imaging in Quiet and Eruptive Solar Cases
by S. P. Moschou et. al.*
http://cesra.net/?p=2101

Coronal Mass Ejection-driven Type II solar radio burst structure with LOFAR and radio-wave scattering
by Nicolina Chrysaphi et al.*
http://cesra.net/?p=2109

Temperature constraints from inversions of synthetic solar optical, UV and radio spectra
by J. M. da Silva Santos et al*
http://cesra.net/?p=2131

Source Imaging of a Moving Type-IV Solar Radio Burst and its Role in Tracking Coronal Mass Ejection From the Inner to the Outer Corona
by Y. Chen et al.
http://cesra.net/?p=2143

The Dublin Institute for Advanced Studies (DIAS) and School of Physics at TCD
are hosting the Young Radio Astronomers Conference (YERAC) from 26th-19th August 2019,
see website: https://www.dias.ie/yerac2019/index.html

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AOB

- The website http://e-callisto.org/coverage/coverage.html
  presenting your station with an image of the antenna and coverage time has been updated with a link to your station. Longitude and latitude have been read out of your FIT-files. Please check your link regarding correct Google map position. In case the link points to a wrong location, you will need to edit your longitude and latitude in the Callisto configuration file 'callisto.cfg' accordingly and please send me in addition the correct values by email. In case you have a better image of your antenna, please also send me a copy to keep the website up2date. If your station is not on the website at all, please send me the information and an image.

- There are still 2 used but refurbished Callisto instruments on stock for reduced prize of US250$ plus shipping cost. For test data, see here: http://e-callisto.org/Qualification/applidocs.htm

- 2 new CALLISTO and heterodyne converter will be shipped to Arecibo, Puerto Rico

- 2 new CALLISTO have been shipped to Sri Lanka

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

Please do **NOT** respond to the email-address of the email-address above (list-server), it is a computer/robot.
Respond instead directly to me at: cmonstein(at)swissonline.ch or monstein(at)irsol.ch

If you do not want to receive this newsletter, please send me an email and I will take your address out of the database. 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 database.

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