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## CALLISTO status report/newsletter #86

The Sun went active on again on March 8<sup>th</sup> 2020 after a long period of silence. Below a few (new) isolated solar radio burst of type III. It is obvious, that the antenna plays an important role in the observed burst quality. Antennas which are tracking the Sun provide much better quality than just antenna which are fixed in sky-position. We also can recognize that the LWA provides very good results in terms of signal to noise ratio (SNR). Be aware, that each station is observing a different frequency range. I also want to mention, that some stations provide wrong time stamps. Please check your PC-timing at least four times a year and synchronise your system with an internet time server. Correct timing is very important!

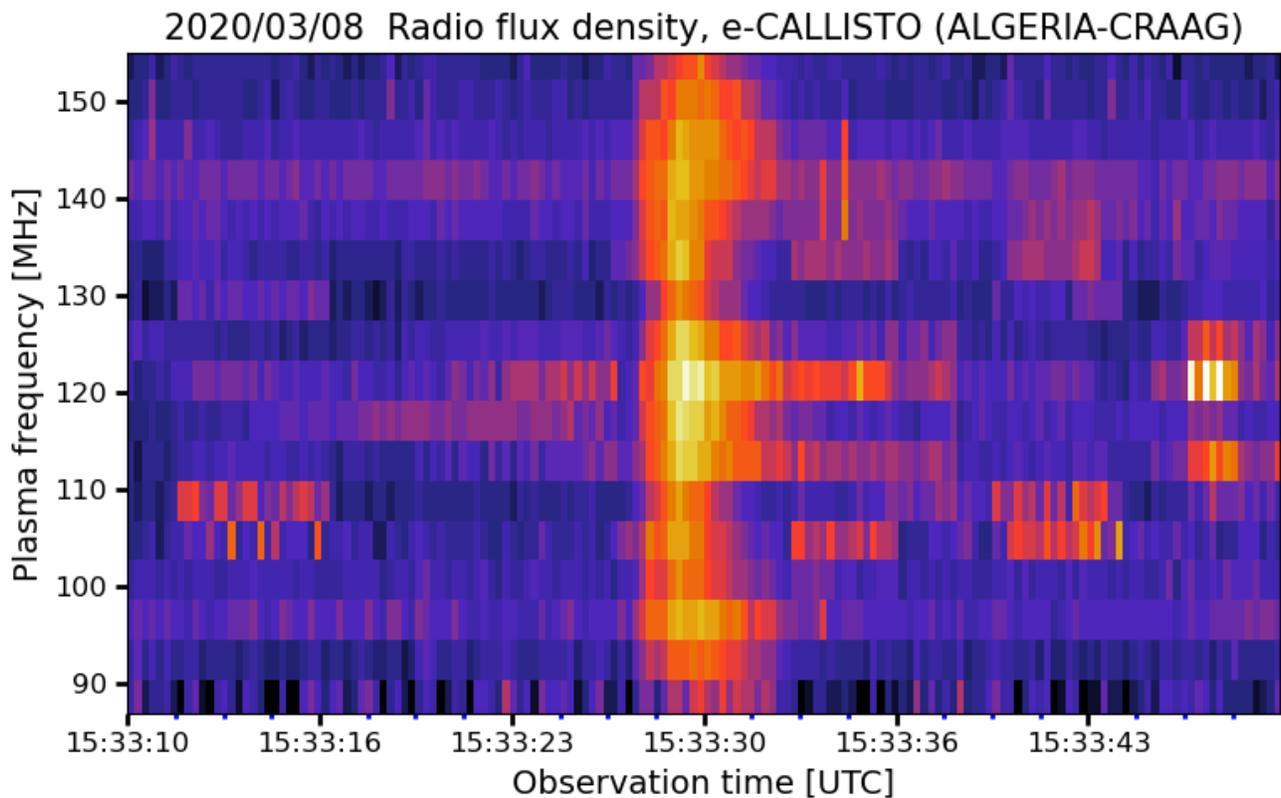


Fig. 1: 1<sup>st</sup> light from Callisto at CRAAG in Boumerdes/Algeria, congratulations. Antenna = LPDA



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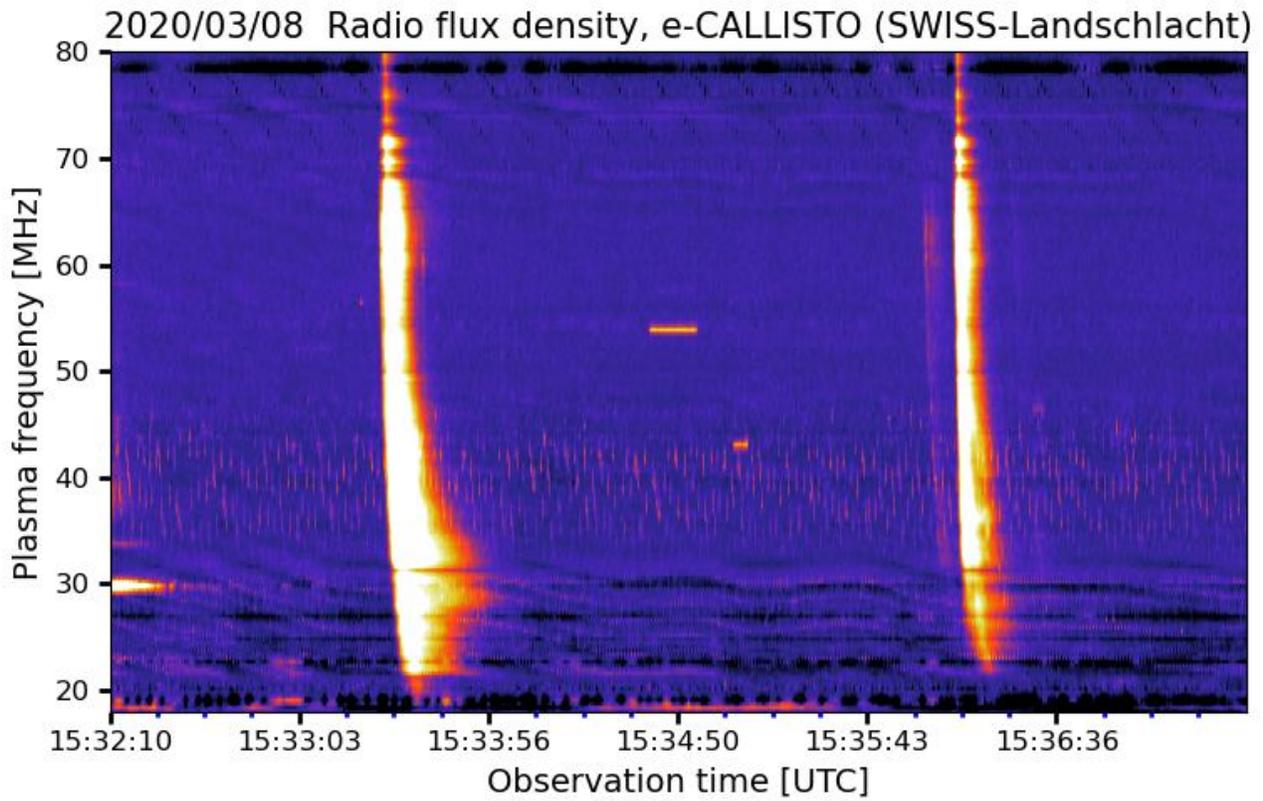


Fig. 2: 1<sup>st</sup> light from Callisto Landschlacht/Switzerland. Observation with LWA

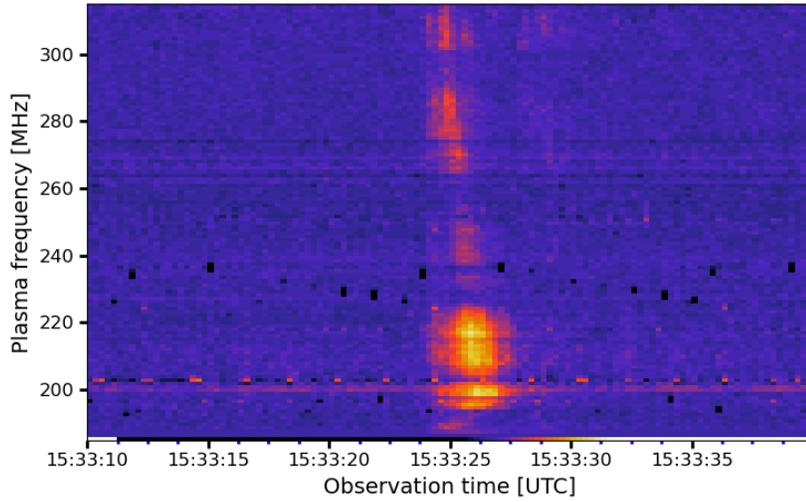


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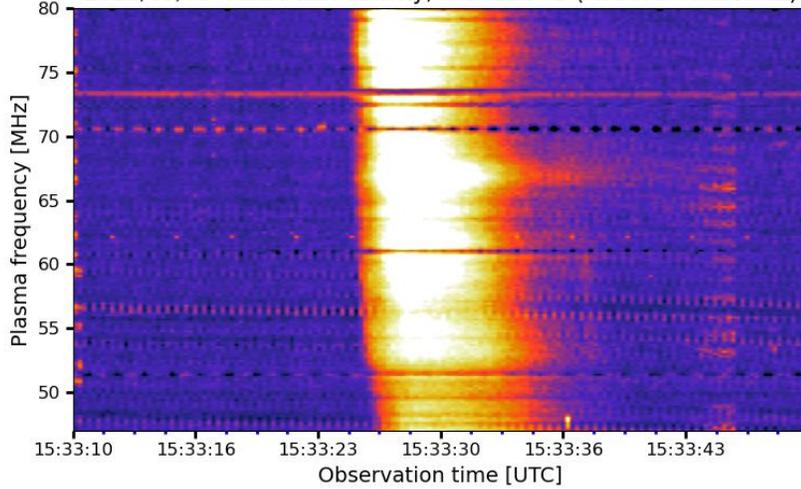
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2020/03/08 Radio flux density, e-CALLISTO (AUSTRIA-MICHELBAACH)

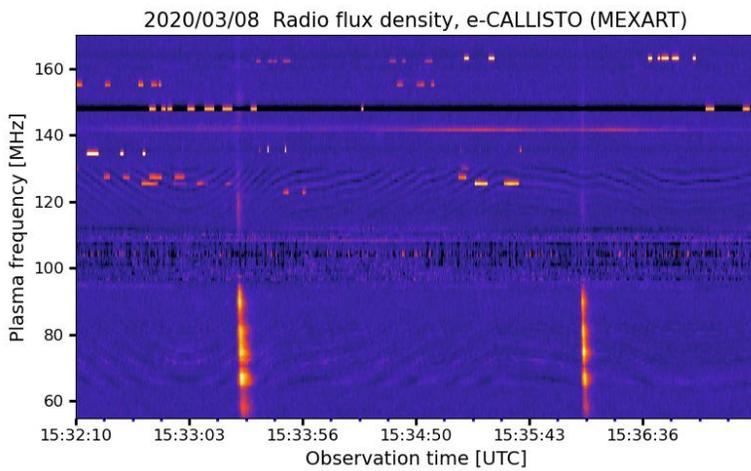
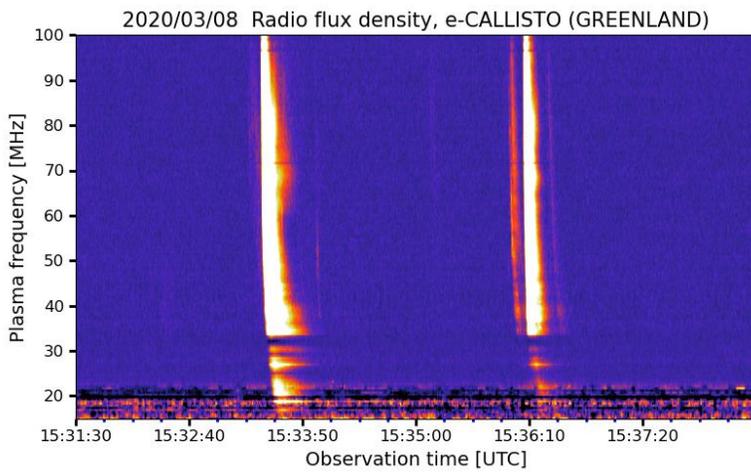
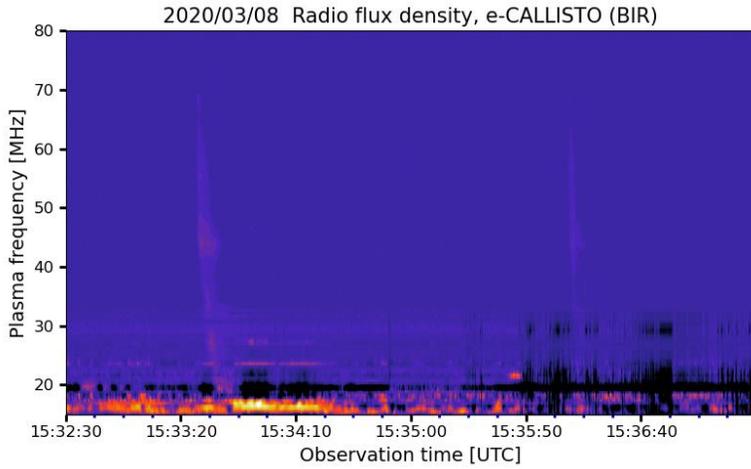


2020/03/08 Radio flux density, e-CALLISTO (AUSTRIA-UNIGRAZ)



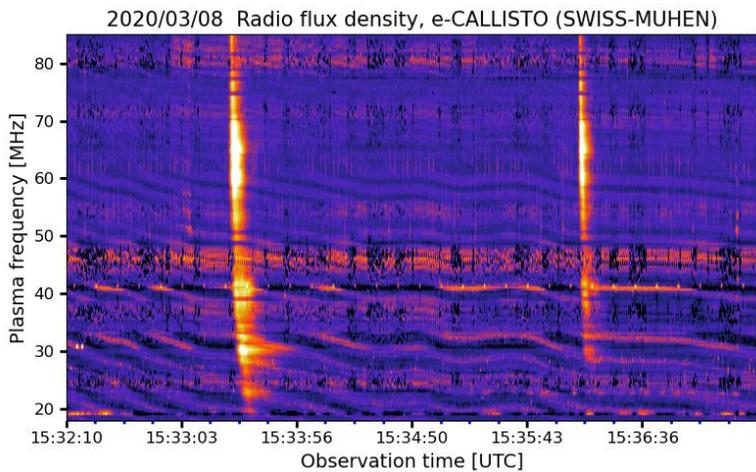
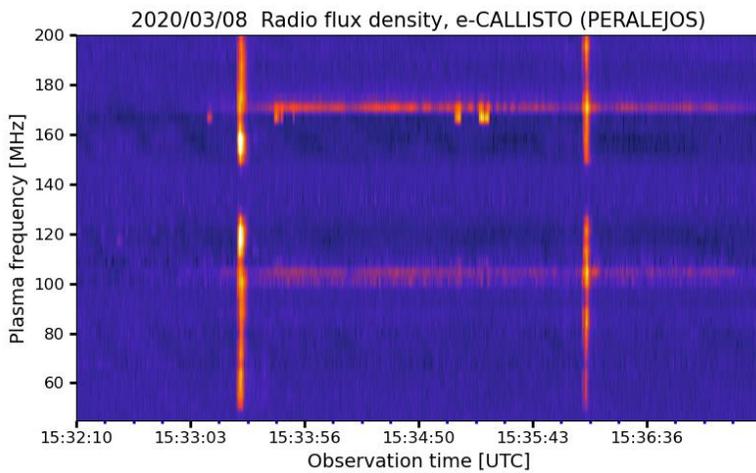
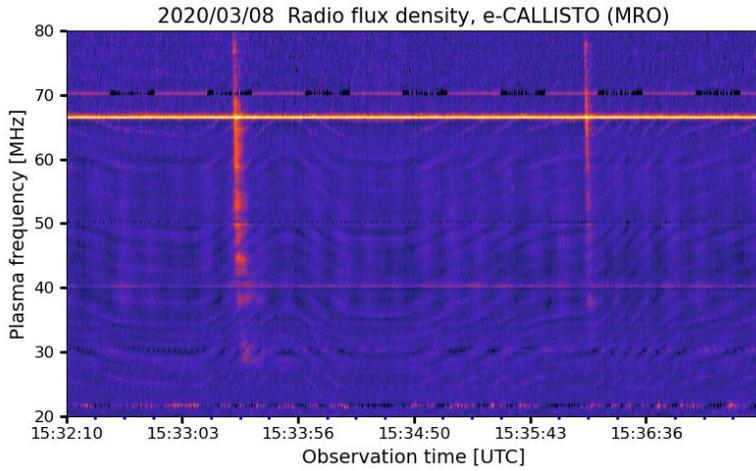


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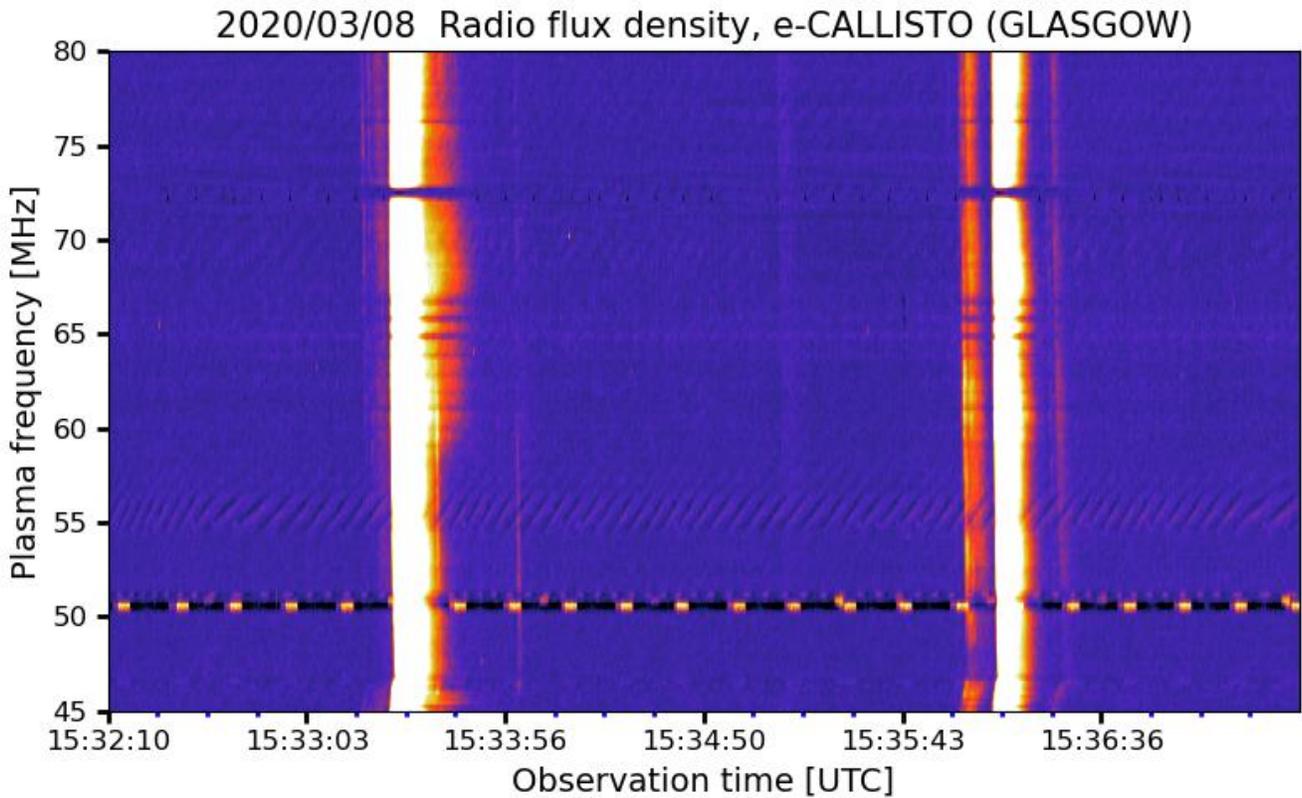
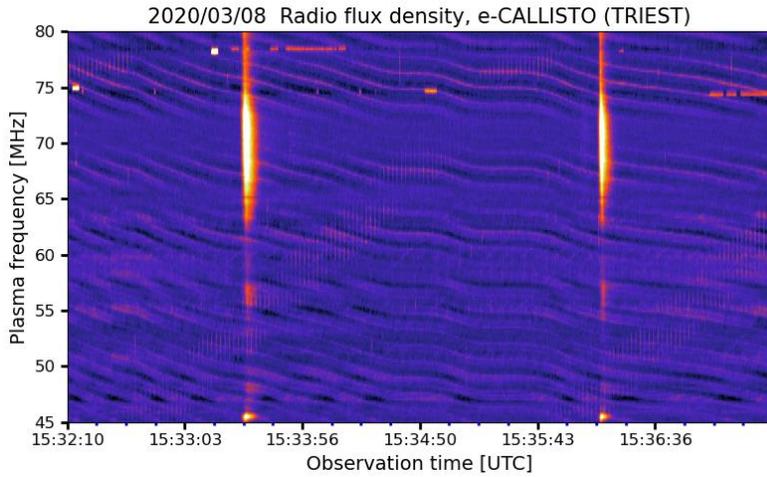


Fig. 12: GLASGOW uses a LPDA which is tracking the Sun, therefore very good quality. Pulsating signal around 50 MHz is due to radio amateurs keeping their frequency.



## CESRA NEWS

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Are Solar Energetic Particle Events and Type II Bursts Associated with Fast and Narrow Coronal Mass Ejections?

by S. W. Kahler et al.\*

<http://cesra.net/?p=2423>

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First imaging spectroscopy observations of puzzling solar drift pair bursts

by A. Kuznetsov and E. Kontar

<http://www.astro.gla.ac.uk/users/eduard/cesra/?p=2432>

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First observation of the solar Type III burst decay and its interpretation

by V. Melnik et al.\*

<http://cesra.net/?p=2451>

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On the Source Position and Duration of a Solar Type III Radio Burst Observed by LOFAR

by P. Zhang et al.\*

<http://cesra.net/?p=2497>

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Evolution of Coronal and Interplanetary Shock Waves Inferred from a Radio Burst

by K. Alielden

<http://cesra.net/?p=2474>

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The multi-thermal chromosphere: inversions of ALMA and IRIS data

by J. M. da Silva Santos et al.

<http://www.astro.gla.ac.uk/users/eduard/cesra/?p=2484>

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Spectral Structures of Type II Solar Radio Bursts and Solar Energetic Particles

by K. Iwai

<http://cesra.net/?p=2514>

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## PAPERS

Increase in Interference Levels in the 45 – 870 MHz Band at the Spanish e-CALLISTO Sites over the Years 2012 and 2019

[http://em.rdcu.be/ls/click?upn=1VX9wGiUV7k-2FG8imEHteF8RxD-2FYP6L8ShNJ7AxoBAH0-3DZwvZ\\_nvW3yOs1-2BNrU8Bsg1VIFnUdaHmSWvlUezqpDT7tbsJDZq5R1NJ-2BGVIJbFLInmN5HNAm9MyfSM-2FpiwBYQv8FILB-2B-2BonR1-2BRYejNMhZTadWBtatWDvwdgCSND0JVFidiHt4IUo07YBzGrj8d70GPlkzGHLuhrAMcC9IIFzVwUOYSDjgjsPvS88NIpVXvtqfkE8Ob8zycDL03Bh9aqYN7Y7grrNT9EcOeyDumEG-2F74AVqStD84iIksyQiMw3ksRCHwNfZ2DTPD7Sqsy-2B0ejOGxgblv9v5sD6H4pGtH1F3yIOfwP-2Fznob-2BtfJanz0eGJWZpl](http://em.rdcu.be/ls/click?upn=1VX9wGiUV7k-2FG8imEHteF8RxD-2FYP6L8ShNJ7AxoBAH0-3DZwvZ_nvW3yOs1-2BNrU8Bsg1VIFnUdaHmSWvlUezqpDT7tbsJDZq5R1NJ-2BGVIJbFLInmN5HNAm9MyfSM-2FpiwBYQv8FILB-2B-2BonR1-2BRYejNMhZTadWBtatWDvwdgCSND0JVFidiHt4IUo07YBzGrj8d70GPlkzGHLuhrAMcC9IIFzVwUOYSDjgjsPvS88NIpVXvtqfkE8Ob8zycDL03Bh9aqYN7Y7grrNT9EcOeyDumEG-2F74AVqStD84iIksyQiMw3ksRCHwNfZ2DTPD7Sqsy-2B0ejOGxgblv9v5sD6H4pGtH1F3yIOfwP-2Fznob-2BtfJanz0eGJWZpl)

<https://www.nationalgeographic.com/animals/2020/02/solar-storms-gray-whale-strandings-magnetic-sense/>

## AOB

- IRSOL is meant as the new core-station of the e-Callisto network, once the instruments at ETH Zurich will be shut down due to retirement of the PI.
- 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.
- COSPAR2020 at Kodaikanal Solar Observatory, India was very successful. In addition KSO is preparing a solar radio interferometer, based on CALLISTO.
- During my flight back from India, I visited Janaka Adassuriya, Astronomy Division, Arthur C Clarke Institute, Katubedda, Moratuwa Sri Lanka to give a talk and to comment on their Callisto installation.





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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 database.

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