ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

ISWI

n|w University of Applied Sciences
Northwestern Switzerland

CALLISTO status report/newsletter #70

Nice type II solar radio burst observed by 9 Callisto stations

Today, 2017-09-02 a C7.7 x-ray event was followed by a type II solar radio burst with almost 1000 km/s velocity expanding into interplanetary space, see NOAA-message below:

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5610 +     1526   1541      1556  G15  5   XRA  1-8A      C7.7    8.8E-03   2672
5610 +     1536   ////      1548  SAG  C   RSP  025-134   II/2    976       2672
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Below all observations in alphabetical order.

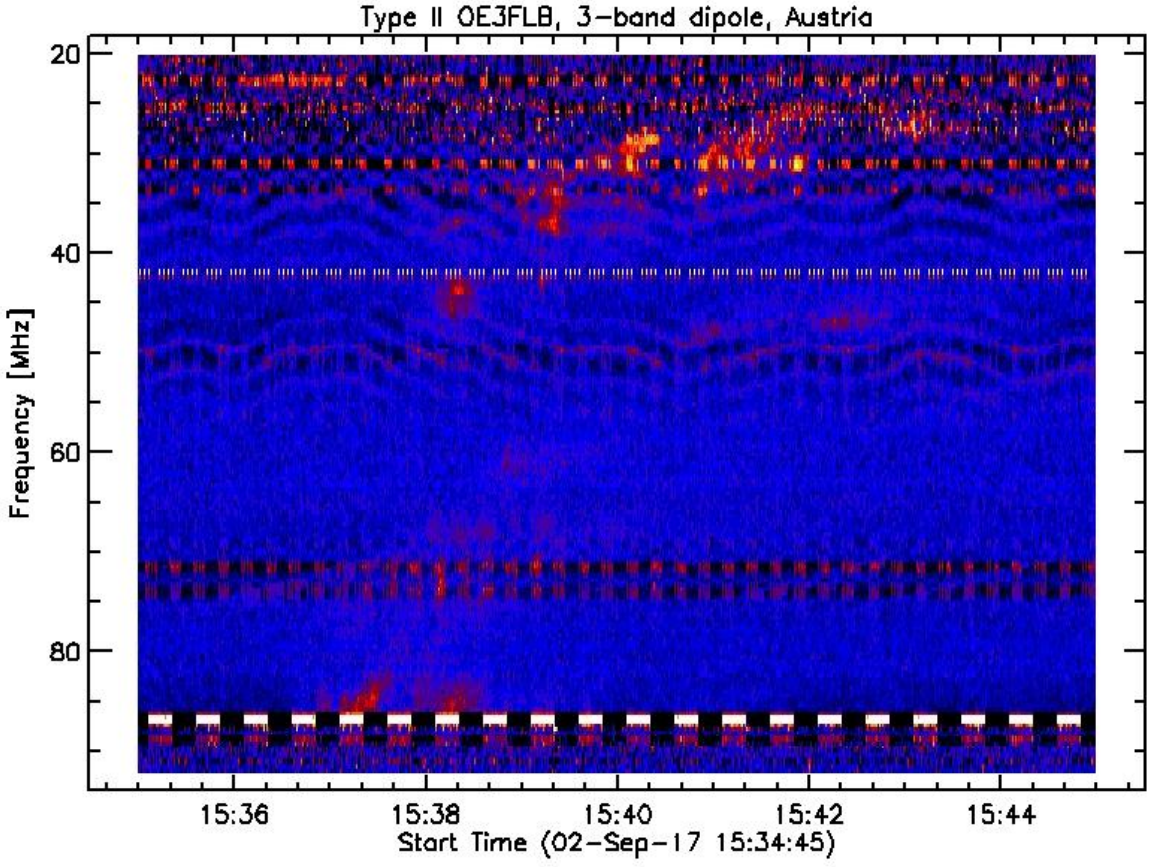

Fig. 1: Weak burst at station OE3FLB with a 3-band dipole and linear polarization near Vienna, Austria.

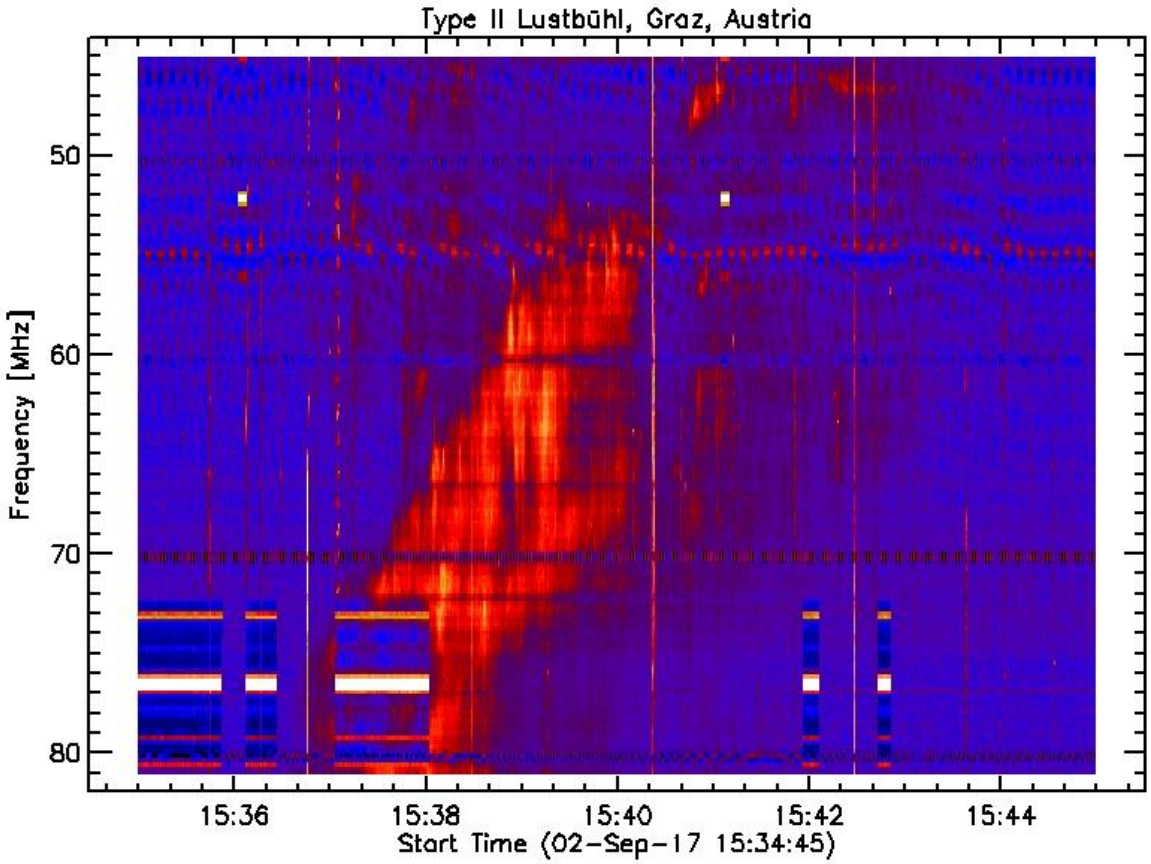

Fig. 2: University of Graz, Austria with LPDA fixed in sky - position in linear polarization. A converter would allow to observe fundamental in this case.

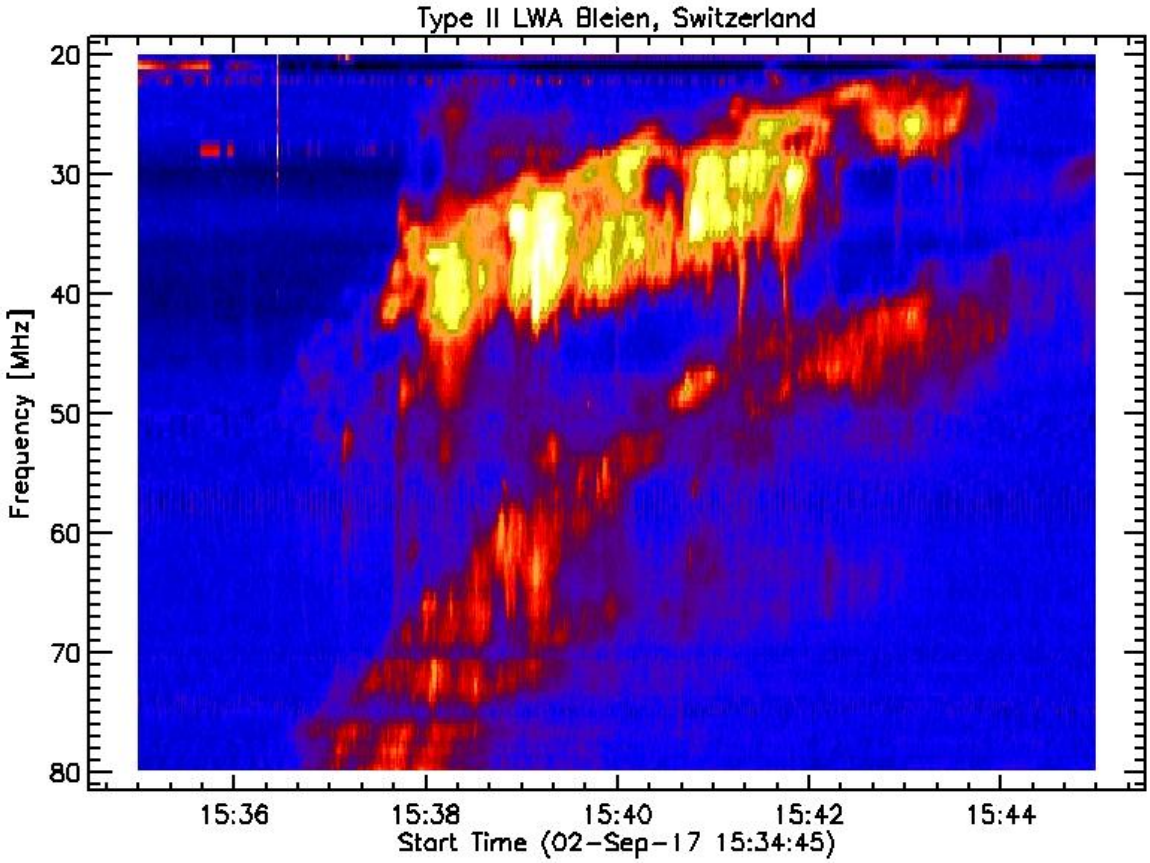

Fig. 3: Bleien Switzerland with LWA. Bright fundamental and weak 1st harmonic in circular polarization. We can also see 'herring bones' and split band which allows to estimate solar magnetic field.

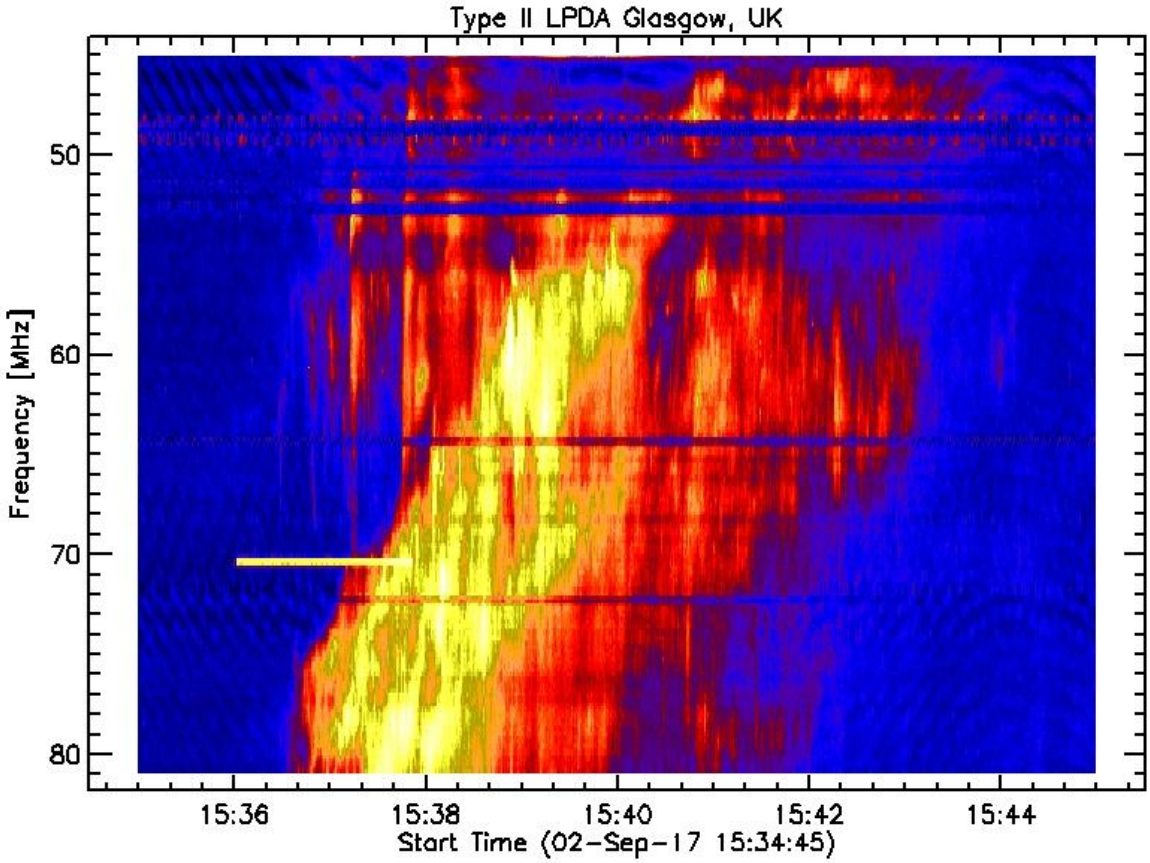

Fig. 4: Glasgow, UK with LPDA pointing to the sun in linear polarization. Here, we only see 1st harmonic, fundamental is out of band. A heterodyne converter would allow to observe fundamental in this case.

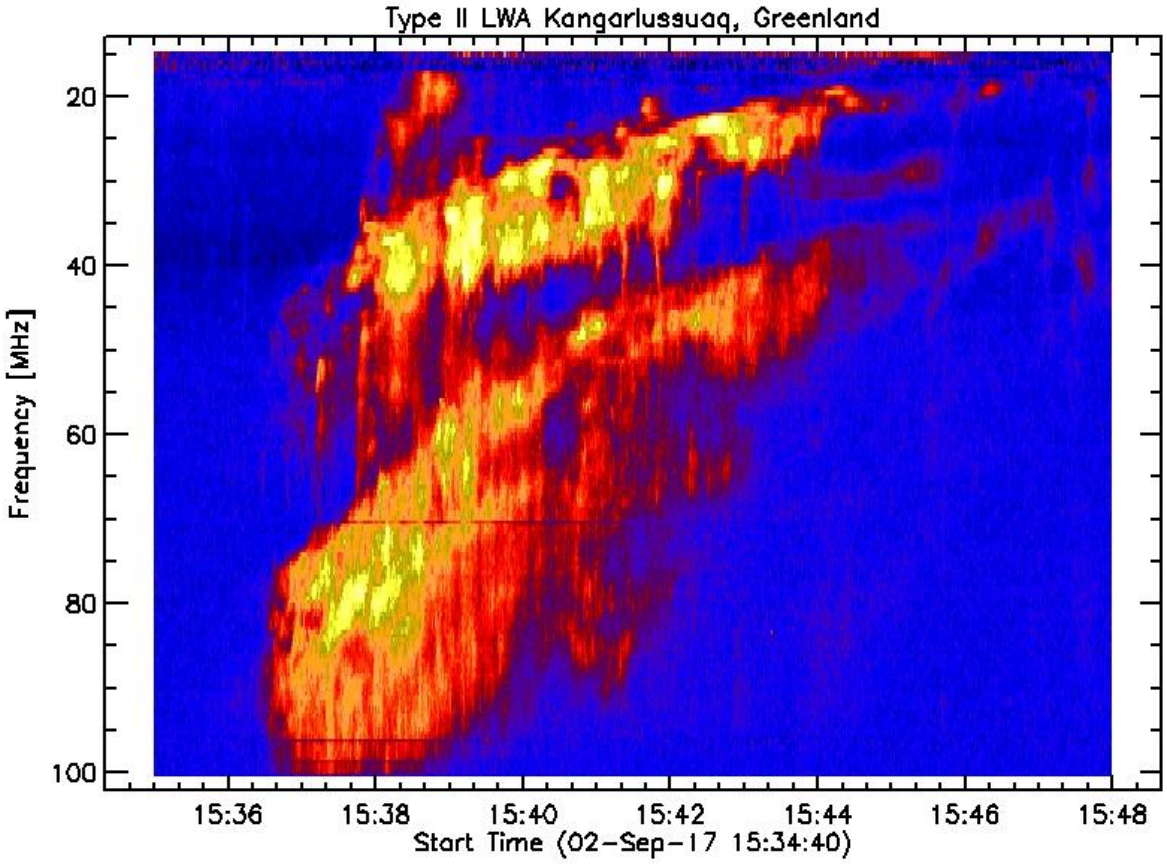

Fig. 5: Kangarlussuaq, Greenland with LWA in circular polarization. Thanks to a heterodyne up-converter we can observe fundamental and 1st harmonic. Very nice observation without rfi.

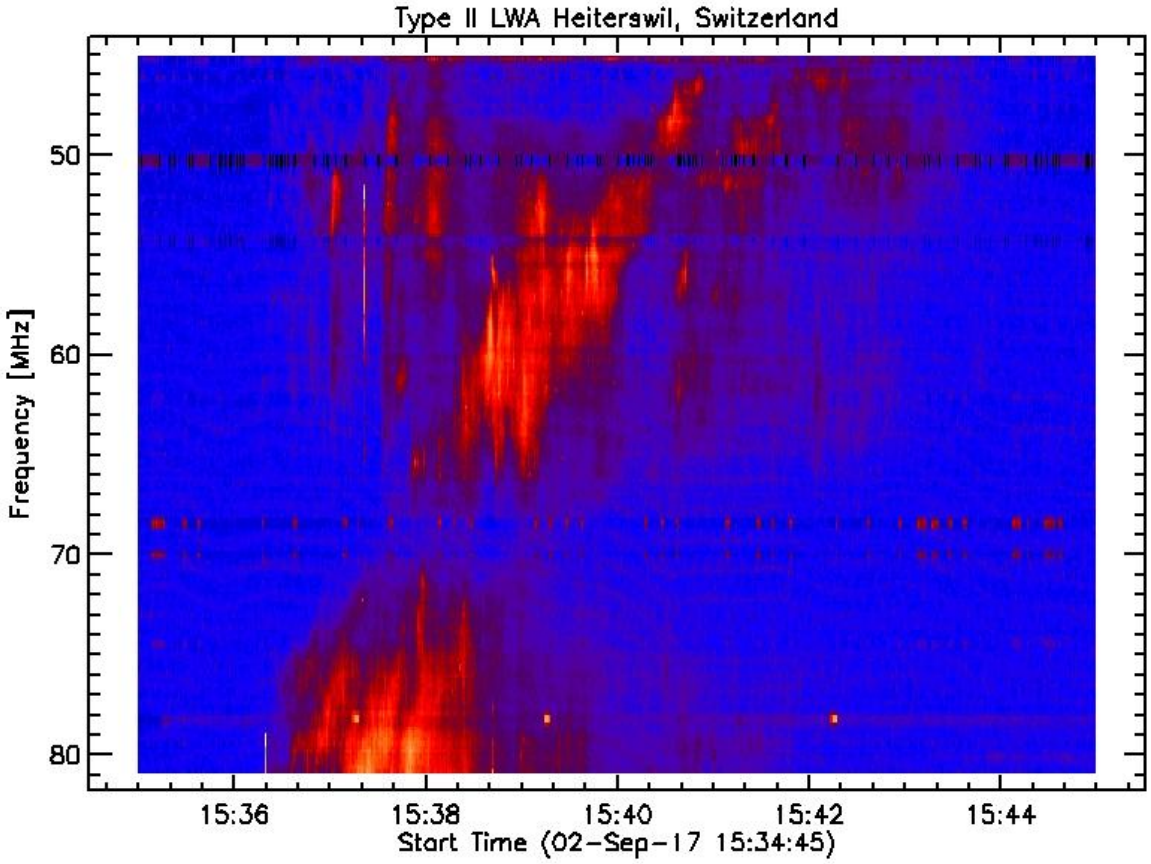

Fig. 6: Heiterswil, Switzerland with LWA in linear polarization. We can only see 1st harmonic, fundamental is missing due to native frequency range of Callisto. A converter would allow to observe fundamental in this case.

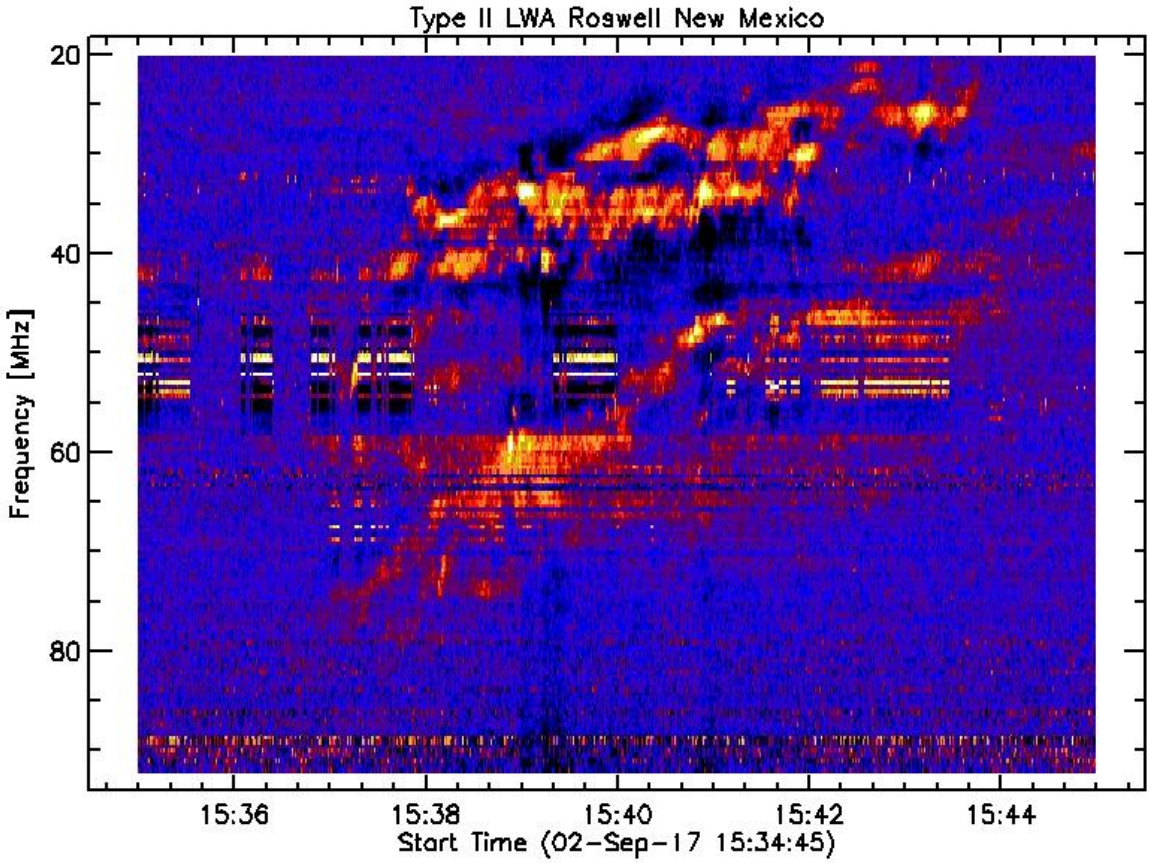

Fig. 7: Roswell New Mexico with LWA in circular polarization. Thanks to the heterodyne converter we can observe fundamental and harmonic radiation of the type II burst.

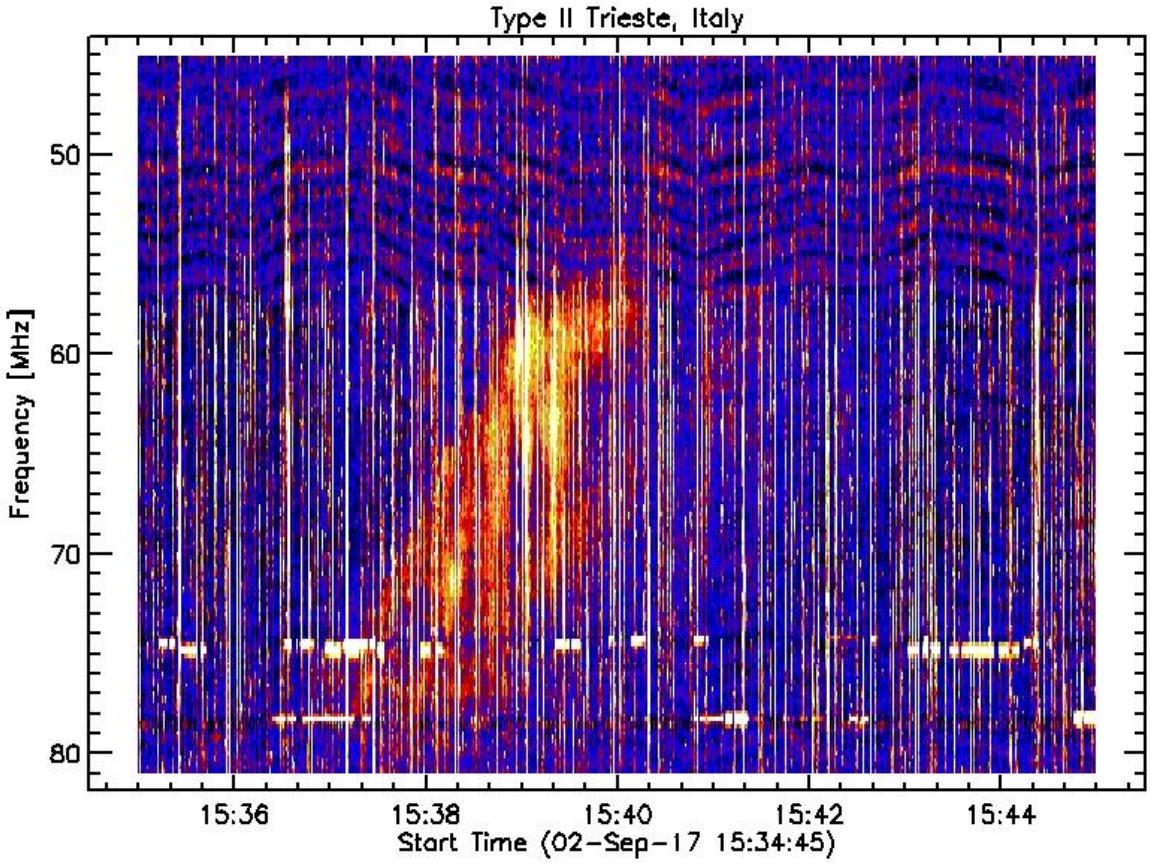

Fig. 8: Trieste, Italy with a nearby very strong lightning/thunderstorm (vertical white lines). LPDA in linear polarization.

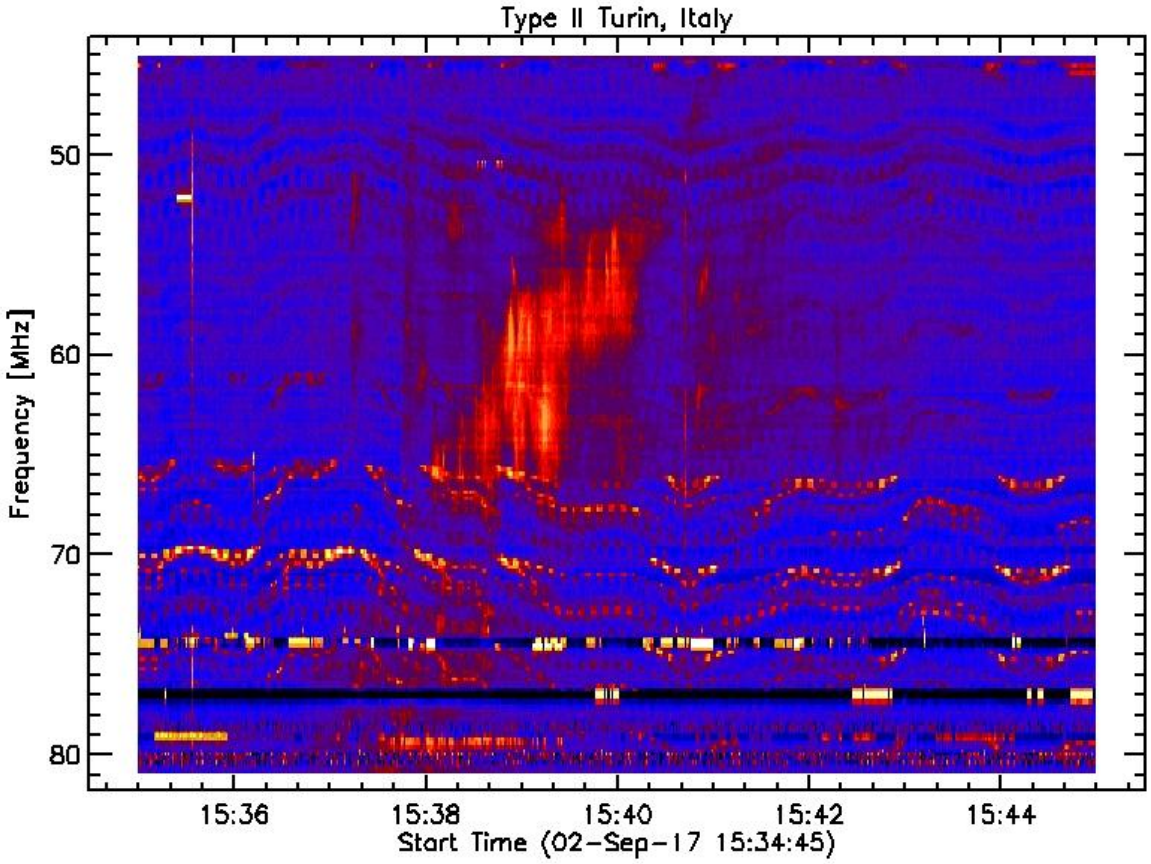

Fig. 9: Fabrizio Francione, Turin, Italy with LPDA in linear polarization.

CESRA news

The Community of European Solar Radio Astronomers (*CESRA*), currently represented by Eduard Kontar of University of Glasgow provides highlights of the solar community, called 'nuggets'. Here a few recent examples:

Siberian Radioheliograph: First Results
by S.V. Lesovoi et al.*
http://cesra.net/?p=1426

Oscillation of solar radio emission at coronal acoustic cut-off frequency
by T. Zaqarashvili et al.
http://cesra.net/?p=1450

Probing the Temperature Structure of the Solar Chromosphere with ALMA
by C. Alissandrakis et al.*
http://cesra.net/?p=1457

Wavelet-based characterization of small-scale solar emission features at low radio frequencies
by A. Suresh et al.*
http://cesra.net/?p=1473

Traveling Ionospheric Disturbances as Huge Natural Lenses: Solar Radio Emission Focusing Effect
by A. Koval et al*
http://cesra.net/?p=1480

AOB

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- ESA Space Situational Awareness: http://swe.ssa.esa.int/
- http://swe.ssa.esa.int/web/guest/GEN_lst
- You need to register first, then you can login for data retrieving
- http://swe.ssa.esa.int/web/guest/request-for-registration
- ---

- Status Callisto in different countries/locations unknown. Any information is very welcome. It would be nice if all countries could provide solar data to the network.

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

- In case you plan to publish a paper based on e-Callisto data, please invite the observer and me as the PI of the network for co-authorship. This, according to the UN/ISWI resolution about data policy, addressed during the last UN/Japan workshop at Fukuoka University.

- 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 Particle Physics and Astrophysics (IPA)*, ETH Zurich.

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