

題名 ISWI Newsletter – Vol. 5 No. 120
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* ISWI Newsletter – Vol. 5 No. 120                26 November 2013 *
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*           I S W I = International Space Weather Initiative      *
*                   (www.iswi-secretariat.org)                    *
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* Publisher:      Professor K. Yumoto, ICSWSE, Kyushu University, Japan *
* Editor-in-Chief: Mr. George Maeda, ICSWSE (maeda[at]serc.kyushu-u.ac.jp)*
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Attachment(s):

- (1) "status20131116_V0", 600 KB pdf, 3 pages.
- (2) "ICS-12 pamphlet", 800 KB pdf, 2 pages.
- (3) "Calm solar cycle prompts questions about impact on Earth",
 . 250 KB pdf, 2 pages.

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:                               Re:
:                               [1] Attending STSC of COPUOS in Feb. of 2014
:                               to deliver a statement regarding space weather
:                               research and education in your country
:                               [2] eCallisto Report No. 46
:                               [3] 12th Int'l Conference on Substorms,
:                               a year from now.
:                               [4] Calm solar cycle; media news clip.
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Dear ISWI Participant:

There are four items today:

[1]

As many of you are aware, each year in February at the UN complex in Vienna, the Scientific and Technical Subcommittee (STSC) of COPUOS gathers for various meetings -- including meetings that concern space weather. It is their standing policy to encourage each member nation of COPUOS to send one or more representatives to deliver statements at this February gathering of member nations. This is the mechanism for UN COPUOS to get input from its members.

If you wish to deliver a statement on behalf of your government, please do so. Travel funds for this purpose are often made available from the foreign ministry of your government, so please inquire there.

If your country is not yet a member of COPUOS, please organize a domestic effort that leads to membership. It should not be hard to make a good case for membership, as COPUOS has 74 member states at this point in time.

[2]

Please find attached the latest report from the Callisto Project; it is the first attached pdf.

[3]

The second attached pdf is the pamphlet for "ICS-12", the 12th International Conference on Substorms. This pamphlet was being

distributed at "Int'l CAWSES-II Symposium" (Nagoya, Japan) last week;
I scanned it with my personal scanner.

[4]

The last pdf is a news clip from the Internet mass media.
This has been a calm solar cycle -- what are the implications?

Note: I will attend the AGU Fall Meeting in San Francisco, hence
the ISWI Newsletter be closed from Dec. 6 to Dec. 18. If you
have news, please send the news before this period of time.

Cordially yours,

. George Maeda
. The Editor
. ISWI Newsletter

CALLISTO status report/news letter #46

New Callisto set into operation at Essen Observatory, Germany

During spring 2012, the radio astronomy group at the Walter Hohmann Sternwarte in Essen, Germany, began to build and set up the equipment for the e-Callisto system. Guided by an article from „Funkamateuer“ magazine and the expertise of Karl Heinz Gansel, we succeeded. We started using a commercial log-periodic DVB-T antenna and the results were rather poor. Looking for a simple, low frequency variant we set up a biconical antenna. To get rid of tracking system, the antenna is oriented vertically and tilted. At this site the CALLISTO software is running on an Linux box over a Windows emulator and there are still some quirks to solve. Since October 25th 2013 we are online again and better than ever!

The stations coordinates are longitude 6.9790 degrees east, latitude 51.3938 degrees north and 120 meters above sea level.

Thanks to all involved in this project!

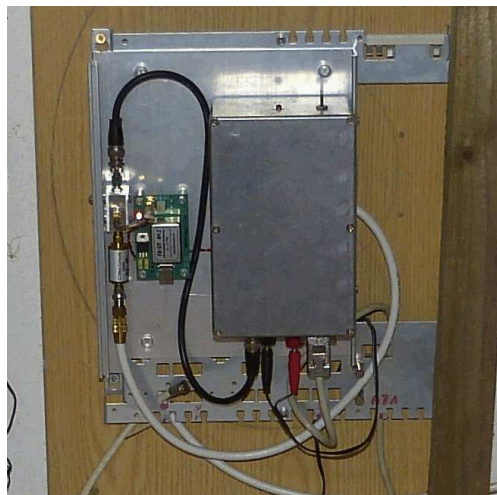
Homepage: <http://www.sternwarte-essen.de>



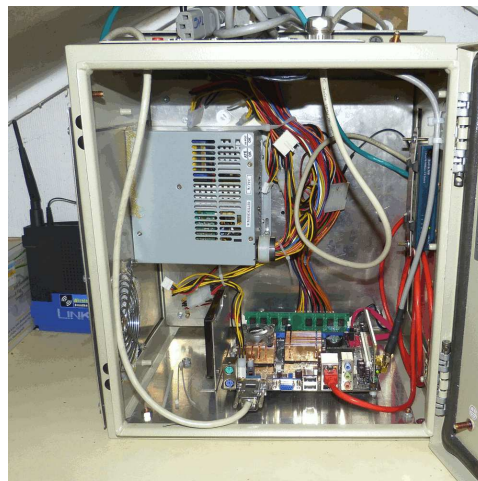
The biconical antenna and the responsible engineer Hannes.



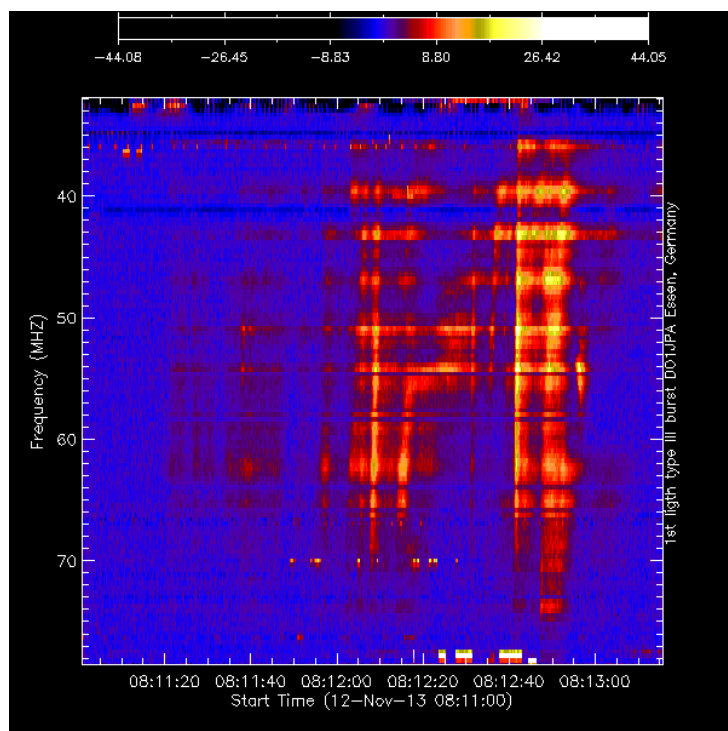
The biconical antenna (called “Fliegenfischfänger” in German language, because it looks like a trap for flying fishes) mounted to a tree. The antennas directional sensitivity should follow the sun, so no tracking system is needed. (Still waiting for some NEC simulations.



Opened, wall mounted receiver-box. Left hand the up-converter, in the middle the CALLISTO tuner box. Now a surge arrester is mounted between the antenna plug and the low pass input filter to protect the electronics.



Computer box containing a small low-power computer, disk and switch.



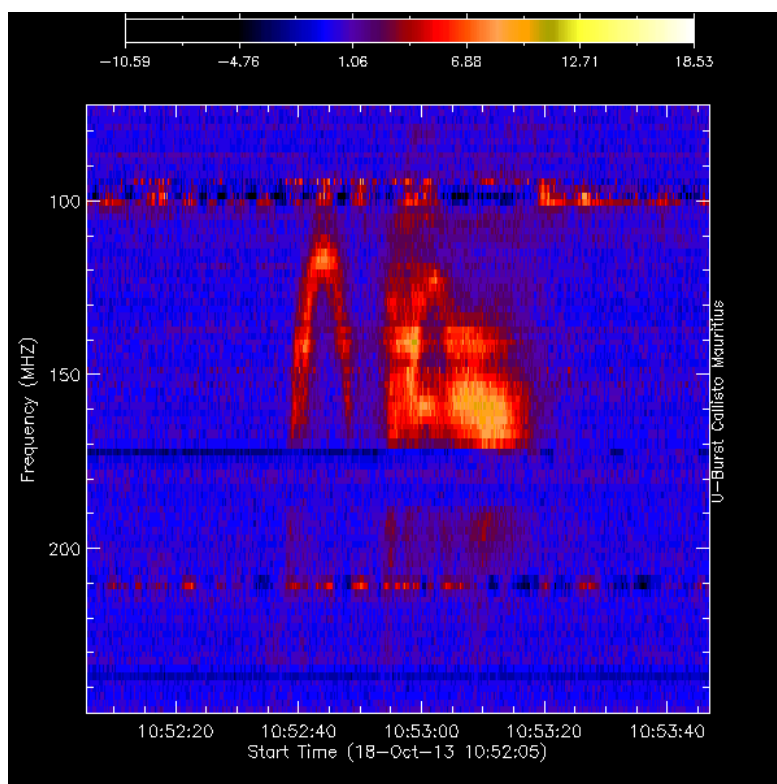
1st light, a small group of type III bursts at low frequency observed at Essen observatory.

**Welcome Jochen
Plessmann and his crew
on board of
the e-Callisto network**

For those stations which can observe at low frequencies (with a heterodyne up-converter), we plan to conduct a campaign based on identical frequency programs such, that the results can easily be correlated. This to significantly improve the SNR.

AOB:

- Mauritius recently observed a nice U-type solar radio burst.



- 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 Astronomy, ETH Zurich.

Please do **not** respond to the email-address of the list-server, respond instead directly to me (address below).
If you do not want to receive this news-letter please send me an email and I'll take your address out of the data base.
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 data base.

Christian Monstein, Institute for Astronomy, ETH Zurich, Switzerland. email: monstein(at)astro.phys.ethz.ch

Important Dates:

First circular: January 1, 2014

Abstract submission deadline: June 30, 2014

Financial support request deadline: June 30, 2014

Early registration deadline: August 31, 2014

Registration Fees:

Payment received by August 31, 2014

(after August 31, 2014)

Regular 25,000 (35,000) yen

Student 15,000 (25,000) yen

Accompanying Person 5,000 (10,000) yen

Science Organizing Committee (SOC):

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This pamphlet was distributed at Int'l
CAWSES-II Symposium (Nagoya, Japan),
18-22 Nov. 2013.

ICS-12

The 12th International Conference on Substorms

November 10-14, 2014

Ise, Japan

For details about the Conference, see the web site:

<http://www.stelab.nagoya-u.ac.jp/ICS-12/>

*Development of an auroral substorm
(Akasofu, Planet. Space Sci., 1964)*

Conveners:

K. Shiokawa and M. Fujimoto

Over the half century since the first finding of the auroral substorm by Akasofu (1964), auroral and magnetospheric substorm has been one of the main topics for the scientists in space physics. Not only giving the spectacular auroral view, substorm contains various fundamental processes of plasma acceleration and dissipation in the magnetosphere and the ionosphere. Recent satellite missions of THEMIS and Van Allen Probes as well as several modeling efforts are giving more insights into the relationship between the mid-tail plasma sheet and the inner magnetosphere and the relationship between substorms and storms. Extended ground imager, radar, and magnetometer arrays provide more complex dynamical features of the magnetosphere during substorms.

During ICS-12 we are going to highlight the most recent results in substorm research. Topical sessions may cover substorm processes in the tail, interaction between the tail and the inner magnetosphere and ionosphere, substorm currents and its dynamics, and the role of substorm in geospace energetics, as well as the role of MHD and kinetic instabilities in substorms. Other substorm-related researches are also welcomed, such as storm-substorm relationship, ULF/ELF/VLF waves, and non-Earth substorm-like features. Ample opportunity will be given for discussions on the new results.

Prof. Akasofu

Meeting Schedule:

Nov. 10 (Mon), 11 (Tue), and 13 (Thu) morning:

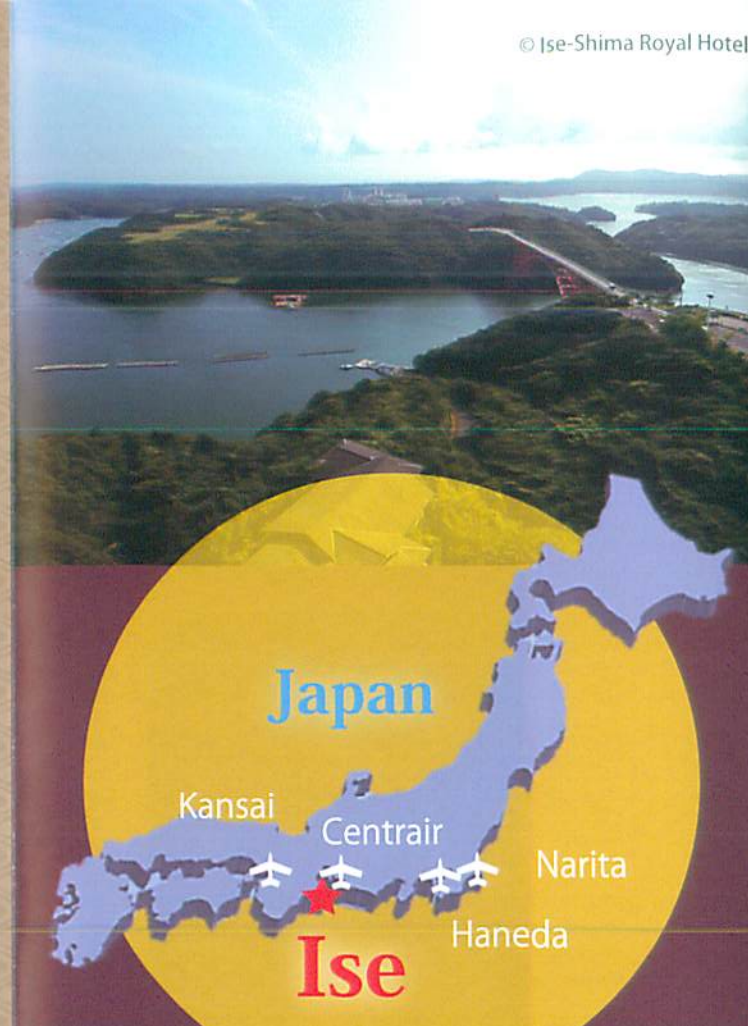
tutorial lectures by

S.-I. Akasofu, V. Angelopoulos, and D. N. Baker

Nov. 12 (Wed) afternoon: excursion

evening: banquet

© Ise-Shima Royal Hotel



Access to Ise:



Venue:

Ise-Shima Royal Hotel, Shima, Japan

<http://www.daiwaresort.jp/en/ise/index.html/>

The conference will be held in Ise-Shima Royal hotel that is located at the height from which beautiful complex coastlines come into your sight.



The area around the venue is in the Ise-Shima National Park on the Shima Peninsula. In the national park, there are numerous historical and interesting places including the Ise Grand Shrine (Ise jingu). Ise Jingu is one of the most sacred Shinto shrine in Japan. Amaterasu Omikami, the ancestral goddess of the Imperial Family, was enshrined 2000 years ago, and has been worshiped by the successive emperors. For more information on the Shrine, please visit <http://www.isejingu.or.jp/english/>.

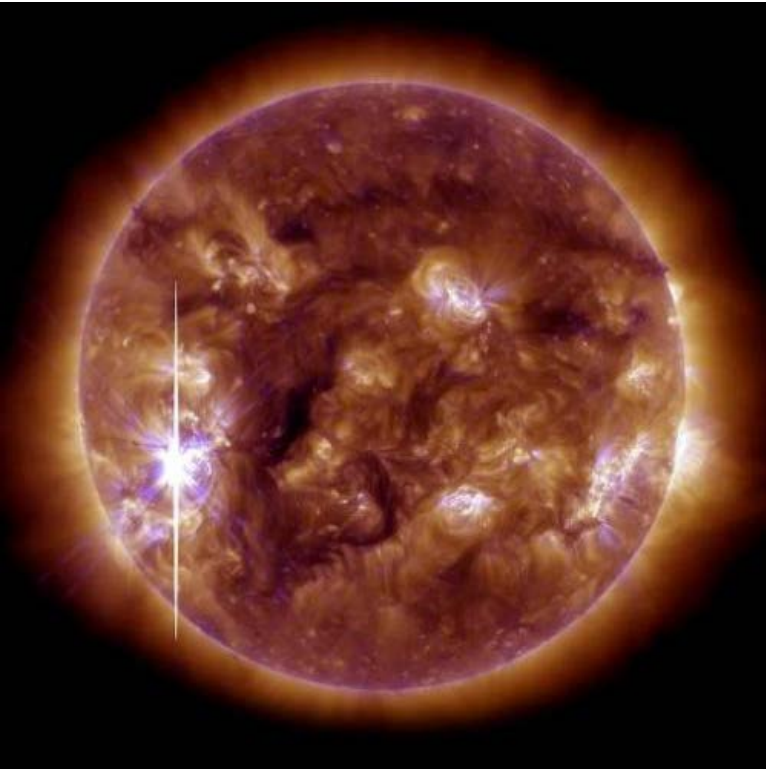


Weather:

Average temperatures in November in Ise-Shima range from a high of 20 degrees Celsius (68 degrees Fahrenheit) to a low of 5 degrees Celsius (41 degrees Fahrenheit). Weather conditions in November are pleasant but sometimes chilly. Autumn colors are spectacular.

Calm solar cycle prompts questions about impact on Earth

20 hours ago by Jean-Louis Santini



An image released on November 5, 2013, shows the sun brightening when an X-class solar flare bursts from a large, active sunspot

The surface of the sun has been surprisingly calm of late—with fewer sunspots than anytime in in the last century—prompting curious scientists to wonder just what it might mean here on Earth.

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Sunspots have been observed for millennia—first by Chinese astronomers and then, for the first time with a telescope, by Galileo in 1610.

The [sunspots](#) appear in roughly 11-year cycles —increasing to a daily flurry and then subsiding drastically, before amping up again.

But this cycle—dubbed cycle 24—has surprised scientists with its sluggishness.

The number of spots counted since it kicked off in December 2008 is well below the average observed over the last 250 years. In fact, it's less than half.


"It is the weakest cycle the sun has been in for all the space age, for 50 years," National Oceanic and Atmospheric Association physicist Doug Biesecker told AFP.

The intense electromagnetic energy from sunspots has a significant impact on the sun's ultraviolet and X-ray emissions as well as on [solar storms](#).


Solar storms can interrupt telecommunications and electronic networks on Earth. Sunspot activity can also have an impact on the Earth's climate.

Cycle 23 hit its maximum in April 2000 with an average of 120 solar spots a day. The cycle then wound down, hitting bottom around December 2008, the point at which


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scientists marked the start of the current cycle.

The minimal [solar activity](#) at the end of cycle 23 led astronomers to predict a slow cycle 24. But the reality fell even below expectations.

In the first year of the cycle, during which solar activity should have risen, astronomers counted 266 days without a single sun spot.

"The forecast peak was 90 sunspots," Biesecker said, noting that even though the activity has risen over the past year, "it's very clear it is not going to be close to 90."

"The sunspots number peaked last year at 67, almost half a typical cycle," he added.

The last time a sunspot cycle was this slow was in February 1906, the peak of cycle 14, with just 64 spots a day.

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The "very long minimum: three years, three times more than the previous three cycles of the space age" was a major surprise, said University of Montana physicist Andres Munoz-Jamillio.

A magnetic switch

Cycle 24 has also diverged from the norm in another surprising way.

Typically, around the end of each 11-year [sunspot cycle](#), the sun's magnetic fields switch direction. The northern and southern hemispheres change polarity, usually simultaneously.

During the swap, the strength of the magnetic fields drops to near zero and reappears when the polarity is reversed, scientists explain.

But this time, something different seems to be happening. The north pole already reversed its polarity several months ago—and so it's now the same polarity as the south pole.

According to the most recent satellite measurements, "the south hemisphere should flip on the near future," said Todd Hoeksema, director of the Wilcox Solar Observatory at Stanford University.

He didn't seem concerned about the phenomenon.

But scientists are watching the sun carefully to see whether cycle 24 is going to be an aberration—or if this solar calmness is going to stretch through the next cycle as well.

"We won't know that for another good three or four years," said Biesecker.

Some researchers speculate this could be the start of a prolonged period of weak solar activity.

The last time that happened, during the so-called "Maunder Minimum" between 1650 and 1715, almost no sunspots were observed. During the same period, temperatures dropped sharply on Earth, sparking what is called the "Little Ice Age" in Europe and North America.

As the sunspot numbers continue to stay low, it's possible the Earth's climate is being affected again.

But thanks to global warming, we're unlikely to see another ice age. "Things have not started to cooling, they just have not risen as quickly," Biesecker said.

➕ Explore further: [Physicists monitoring huge solar event \(w/ Video\)](#)

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