

Newsletter 7 – December 2015

Dear SSALMON members.

There were many excellent news during the last weeks, which promise a truly exciting year 2016 for ALMA observations of the Sun:

1. On November 30th, it was officially decided to offer solar observing in Cycle 4.
2. The SSALMON Expert Teams put together a White Paper for potential observations during Cycle 4.
3. The SSALMON article in *Advances of Space Research* has been published with its final reference: *Advances in Space Research*, Vol. 56, Issue 12, 2679–2692 (December 15th, 2015) <http://dx.doi.org/10.1016/j.asr.2015.05.027>
4. The article for *Space Science Reviews* has been accepted and is now in press.
5. The University of Oslo will host the ERC-funded project "Solar ALMA" from 2016 to 2021.
6. The presentation of SSALMON at ESO Headquarters in Garching, Germany, on December 4th was received very well, which will positively affect our future work.

Furthermore, we welcome Dr. E. Avrett as SSALMON member #75.

This newsletter also contains a call for the Expert Teams A-C for providing modelling data and tools, which can be used for the preparation of Cycle 4 observing proposals.

Solar Observing in Cycle 4

The positive decision to offer solar observing during Cycle 4 is a true milestone. The offered observing modes are not yet making use of ALMA's full potential but are nonetheless great:

- Band 3 and band 6 continuum observations of the Sun.
- Both 7m and 12m antennas correlated by the baseline correlator.
- Both single pointing and mosaicking observations.
- Support of interferometric observations with fast-scanning total power (TP) mapping of the full disk of the Sun.

These capabilities allow for addressing a large range of topics as can be seen from the science cases in the White Paper (see next section). Furthermore, it will enable us to learn more about the instrumental details of ALMA and to advance step by step with the further development of ALMA during the next cycles.

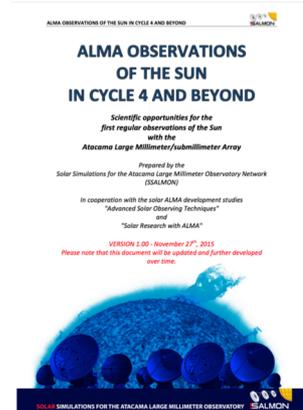
Strategic documents and White Paper for Cycle 4

The strategic team documents have been combined into a **White Paper**, which contains 27 potential science cases for ALMA observations of the Sun during Cycle 4. The individual science cases address a large range of topics including the average stratification of the chromosphere, the structure of Quiet Sun regions, Active Regions and prominences, oscillations and waves, flares and many more. The White Paper also contains more detailed observing strategies and a short account on recommendations for the future development of ALMA's capabilities for solar observing beyond Cycle 4.

During the meeting at ESO Headquarters, it was decided to publish the White Paper in its current form on astro-ph and soon after as an **ALMA Memo**. Both will happen during the coming weeks. The White Paper will be a useful reference for the ESO-funded ALMA development study led by R. Brajsa, which focuses on the future development of the solar observing modes, and for the ALMA observing proposals with a deadline in April 2016.

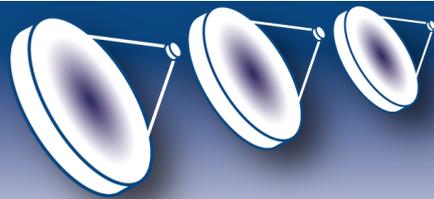
The current version of the SSALMON White Paper is provided on our webpage:

<http://www.ssalmon.uio.no/white-paper-cycle4/ssalmon-white-paper-cycle4-v1.0.pdf>



The ERC project "Solar ALMA"

On December 9th, 2015, I. S. Wedemeyer, was awarded an ERC Consolidator grant for the project "*ALMA – The key to the Sun's coronal heating problem*" (acronym: SolarALMA). The project will start in 2016 and will run for 5 years. The funding of two million euros includes three post-doc/researcher and two PhD positions. Key products, which will be of use for the whole solar community, include data processing and analysis tools based on a combination of numerical simulations and future ALMA observations of the Sun. A workshop is foreseen for 2019.



The resources and results of the ERC project will have important impact on SSALMON and enable the further development with a long-term perspective.

Call for modelling data and tools

A by-product of the telecons held in connection with discussing the White Paper is the decision to now go forward with the Expert Teams A, B and C. The aim is to provide modelling data and tools to all other teams for developing optimal observing strategies for the individual science cases. These test environments can be based on different kinds of numerical models but also on other chromospheric observations. As a default, the data will be publically available via the SSALMON webpage and should be properly referenced whenever used. We will also find a more restricted way to provide data, which are not yet public, if that is wanted. Furthermore, radiative transfer tools for calculating synthetic observables at ALMA wavelengths should be provided.

Please contact me by e-mail to

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if you want to **provide data** which you deem useful **for testing ALMA science cases** by

January 30th, 2016.

This date will give us time to work on the science cases before the proposal deadline in April 2016. In particular, everybody registered for teams A,B,C is kindly asked to contribute.

Upcoming meetings

- **The Sun's Chromosphere in the Era of ALMA, IRIS, and DKIST**,
March 15-18, 2016, Boulder, CO, USA:
<http://www.nso.edu/workshops/SunAID>
It is recommended to register as soon as possible because the number of participants is limited.
- **Cool Stars 19 - The Cambridge Workshop on Cool Stars, Stellar Systems, and the Sun**,
June 6-10, 2016, Uppsala, Sweden:
<http://coolstars19.com/>
We have applied for a session on the solar-stellar connection in the ALMA era, which might be merged with a general stellar radio session. More information soon.
- A general **ALMA conference** will be held in September 2016 in California, USA. You will get more information as soon as the conference has been officially announced.

Time line - What is happening when?

Dec. 2015	Commissioning and Science Verification (CSV) campaign at ALMA.
Jan.-Feb. 2016	Analysis of the CSV results and "reality check" for the proposed science cases, leading to the organization and preparation of ALMA proposals.
Jan. 30, 2016	Deadline for providing modelling tools and data for testing Cycle 4 science cases.
Feb.-Apr. 2016	Work on Cycle 4 science cases with the aim to write ALMA observing proposals.
March 2016	<ul style="list-style-type: none">• Call for ALMA Cycle 4 proposals• European ALMA community days• ALMA, IRIS, and DKIST workshop (<i>a good opportunity to come together and work on proposals</i>)
April 2016	Cycle 4 proposal deadline.
Oct. 2016	Cycle 4 begins.
Dec. 2016	Most likely start of solar ALMA observing season (<i>until April 2016, except for February due to maintenance</i>).

On behalf of your SSALMON team,

Happy Holidays and a Happy New Year!

Sven Wedemeyer

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