

Current status and prospects of solar observations with ALMA

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Solar observations with ALMA have been offered since ALMA-Cycle4 (2016-2017), but scientific results were smaller than predicts, unfortunately. It is caused mainly by the difficulties of solar image synthesis. However, the situation is gradually changing by the efforts of the solar radio community. Actually, seven papers using ALMA solar data were accepted or published by the leading astronomical journals within only these three months(Nov. 2019 - Jan. 2020), despite the number of the Grade-A or B solar programs in each Cycle was less than 10.

We cannot use the full functions of ALMA for solar observations due to the particularity of the observing target. The limitations are also reducing gradually, and the Band7 and Band 5 for solar observations were opened in Cycle 7 and Cycle 8, respectively. The international development team of ALMA solar observations is working on realizing Stokes-V measurement with Band3, now.

In the poster, we summary the achievements of ALMA solar observations and present the current status of the development. Finally, we discuss the prospect of observing the Sun with ALMA, toward the next solar maximum.

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