

Activity Report of Commission J January 1 to June 10, 2016

June 10, 2016

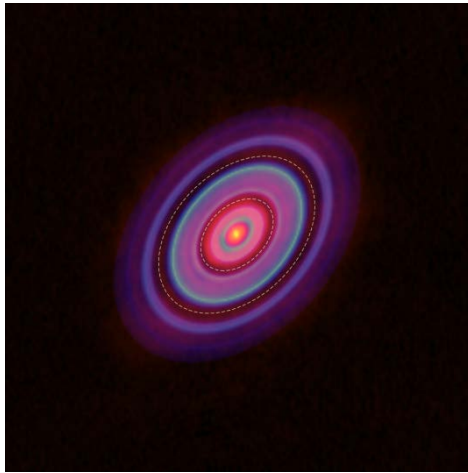
Kenta Fujisawa (Yamaguchi University)

ALMA project

- Latest scientific topics from ALMA press release:

May 25, 2016 Footprints of Baby Planets in a Gas Disk

A new analysis of the ALMA data for a young star HL Tauri provides yet more firm evidence of baby planets around the star. Researchers uncovered two gaps in the gas disk around HL Tauri. The locations of these gaps in the gas match the locations of gaps in the dust found in the ALMA high resolution image taken in 2014. This discovery supports the idea that planets form in much shorter timescales than previously thought and prompts a reconsideration of alternative planet formation scenarios. Below is the image of HCO⁺ gas (blue) and dust (red) distributions in the disk around HL Tauri. The ellipses show the locations of the gaps.



(Credit: ALMA (ESO/NAOJ/NRAO), Yen et al.)

Activities of meetings

- **ALMA Workshop for proto-planetary disks**
Date: January 27, 2016
Venue: University of Tokyo
- **Ibaraki University workshop “Science cases with Polarimetry”**
Date: January 28, 2016
Venue: Ibaraki University
- **ALMA Workshop: "Starburst-AGN Connection - Toward the Merger-Driven Unified Model for Triggering Nuclear Activities"**

Date: February 16, 2016

Venue: University of Tokyo

- **16th Workshop on Submillimeter-Wave Receiver Technologies**

Date: March 7 – 8, 2016

Venue: The University of Electro-Communications

The object of this workshop is to discuss the topics on the new technology of high-sensitivity receivers such as detectors, element-processing, optics and antenna, oscillator, HEMT amplifier, refrigerator, and calibration.

- **Radio Astronomy Forum Symposium 2015 “Now and Future of Radio Astronomy”**

Date: March 9 – 10, 2016

Venue: National Astronomical Observatory of Japan

- **SKA-JP Symposium 2016**

Date: March 18, 2016

Venue: National Astronomical Observatory of Japan

- **ALMA workshop for proto-planetary disks**

Date: March 22, 2016

Venue: National Astronomical Observatory of Japan

- **ALMA workshop “Transition from Gas to Dust”**

Date: March 22, 2016

Venue: Kagoshima University

- **Australia-Japan School on Low Frequency Astrometry in the SKA Era**

Dates: March 28 – 31, 2016

Venue: Kagoshima University

The school will provide introductions to key science goals in the radio astrometry, methodologies drawn from various research fields, and instrumental tools and facilities where innovative ideas can be tested in the near term.

The SKA promises to be the fundamental instrument in radio astronomy for the coming century, but we will need to improve several observational techniques to utilize SKA's amazing capabilities. One of the techniques which will require substantial improvements is the calibration of the long baseline data at low frequencies. Japan has a great deal of strength in this area, as the VERA system depends on the precise calibration of long baseline data to deliver precise astrometric results. However VERA, as well as other present VLBI astrometric projects, focuses on the high frequency, and hence significant developments are required to comparable

results in quality at the lower frequencies. This school will bring together Australian representatives and Japanese colleagues to consider how we can address and collaborate on this issue, making a significant contribution to the SKA project.

Organization of this school is supported by the Australian Department of Foreign Affairs and Trade. Some limited financial support will be available to domestic students.

- **ALMA Workshop “What phase of star formation is controlled by the interstellar magnetic fields?”**

Dates: March 30 - 31, 2016

Venue: National Astronomical Observatory of Japan

Business Meeting

- **URSI Japan Commission J Meeting**

Date March 15, 2016

Venue: Tokyo Metropolitan University

Topics:

1. Activity report
2. Radio Astronomy Forum Symposium
3. Others