

Science Program

December 3 (Mon)

(Opening Session)

- 9:00 - 9:05 **Opening Remarks** (Nario Kuno, Director of NRO)
9:05 - 9:20 **Welcome Address** (Masa Hayashi, Director General, NAOJ)

(Cosmology)

(Chairperson: Eiichiro Komatsu)

- 9:20 – 10:05 **Nick Scoville** (K) *'Evolution of Galaxies and Large Scale Structure at High Redshift'*
10:05 – 10:30 **Tzu-Ching Chang** (I) *'21cm Cosmology: a Progress Report'*
10:30 – 10:50 **Coffee Break**
10:50 – 11:15 **Scott Ransom** (I) *'Detecting Gravitational Waves (and doing other cool physics) with Millisecond Pulsars'*
11:15 – 11:30 **Andrew Blain** (C) *'ALMA before Re-ionization'*

(Galaxies I)

- 11:30 – 12:15 **Fabian Walter** (K) *'The ISM in Nearby Galaxies'*

12:15 – 13:45 **Lunch Break**

(Chairperson: Daisuke Iono)

- 13:45 – 14:10 **Kotaro Kono** (I) *'Observations of high redshift galaxies: from Nobeyama to ALMA'*
14:10 – 14:35 **Dominik Riecheres** (I) *'Detailed Studies of Quasars and their Host Galaxies back to the First Billion Years of Cosmic Time'*
14:35 – 15:00 **Francoise Combes** (I) *'High-z Galaxies with ALMA'*
15:00 – 15:15 **Tohru Nagao** (C) *'FIR-submm Metallicity Diagnostics for High-z Galaxies'*
15:15 – 15:30 **Axel Weiss** (C) *'A Redshift Survey of Strongly Lensed Submm Galaxies Based on Molecular Emission Lines Observed with ALMA'*
15:30 – 15:45 **Tadayuki Kodama** (C) *'From Mahalo-Subaru to Gracias-ALMA: Resolving Galaxy Formation at Its Peak Epoch'*

15:45 – 18:00 **Poster Session**

December 4 (Tue)

(Galaxies II)

(Chairperson: Satoki Matsushita)

- 9:00 - 9:25 **Nario Kuno** (I) *'Giant Molecular Clouds in M33 and M83'*
9:25 - 9:50 **Susanne Aalto** (I) *'Molecules and Chemistry as Tracers of Galaxy Evolution'*
9:50 - 10:15 **Jin Koda** (I) *'Giant Molecular Clouds and Star Formation in Nearby Galaxies'*
10:15 - 10:30 **David Sanders** (C) *'SMA High-Resolution Observations of Molecular Gas in Luminous Infrared Galaxies'*

10:30 - 10:45 **Coffee Break**

(Chairperson: Paul Ho)

- 10:45 - 11:00 **Junko Ueda** (C) *'Reformation of Cold Molecular Disks in Merger Remnants'*
11:00 - 11:15 **Catherin Vlahakis** (C) *'Molecular gas properties of M100 and ALMA Science Verification'*
11:15 - 11:30 **Daniel Espada** (C) *'Disentangling the circumnuclear environs of Centaurus A: Gaseous Spiral Arms in a Giant Elliptical Galaxy'*
11:30 - 11:45 **Akiko Kawamura** (C) *'Physical Properties of Molecular Clouds in the Magellanic Clouds Revealed by Observations in Multi-Transition CO Molecular Lines'*
11:45 - 12:00 **Kunihiko Tanaka** (C) *'The ASTE Galactic Center Survey in the 350 and 500 GHz Bands'*
12:00 - 12:15 **Mareki Honma** (C) *'Maser Astrometry with VERA and the Galaxy's structure'*

12:15 - 13:45 **Lunch Break**

(Star Formation)

(Chairperson: Sheng-Yuan Liu)

- 13:45 - 14:30 **Toshikazu Onishi** (K) *'Star Formation: From Giant Molecular Clouds to Prestellar Cores'*
14:30 - 14:55 **Phil Andre** (I) *'Star Formation Revealed by Herschel'*
14:55 - 15:20 **Shantanu Basu** (I) *'Magnetic Fields and Star Formation: The Formation of Cores and Disks'*
15:20 - 15:35 **Satoko Takahashi** (C) *'Hierarchical Fragmentation of the Orion Molecular Filaments'*
15:35 - 15:50 **Tachihara Kengo** (C) *'The Origin of the Interstellar Turbulence and Small Scale Structures of Molecular Clouds'*

15:50 - 16:20 **Coffee Break**

(Chairperson: Fumitaka Nakamura)

- 16:20 - 16:45 **Patrick Hennebelle** (I) *'Star Formation in Molecular Clouds (Theory)'*
16:45 - 17:00 **Jonathan Tan** (C) *'The Dynamics and Chemistry of Massive Starless Cores'*
17:00 - 17:15 **Jonathan Foster** (C) *'The Millimeter Astronomy Legacy Team 90 GHz Survey (MALT90) and ALMA'*

- 17:15 – 17:30 **John Tobin** (C) *'A Resolved Keplerian Disk Around One of the Youngest Protostars: Implications for Disk Formation Studies in the ALMA Era'*
- 17:30 – 17:45 **Shigehisa Takakuwa** (C) *'Keplerian Circumbinary Disk and Accretion Streams around the Protostellar Binary System L1551 NE'*
- 17:45 – 18:00 **Nagayoshi Ohashi** (C) *'Keplerian Disks around Protostars: from NMA to SMA and ALMA'*

December 5 (Wed)

(Protoplanetary Disks)

(Chairperson: Nagayoshi Ohashi)

9:00 – 9:45 **Ann Dutrey (K)** ‘*Structure of Protoplanetary Disks as Inferred from mm/submm Interferometry*’

9:45 – 10:10 **Sean Andrews (I)** ‘*The Structures of Protoplanetary Disks*’

10:10 – 10:35 **Misato Fukagawa (I)** ‘*High Angular Resolution Infrared Observations of Protoplanetary Disks*’

10:35 – 11:05 **Coffee Break**

(Chairperson: Shu-ichiro Inutsuka)

11:05 – 11:20 **Motohide Tamura (C)** ‘*SEEDS: Direct Imaging of Exoplanets and Their Forming Disks with the Subaru Telescope*’

11:20 – 11:35 **Leonardo Testi (C)** ‘*Observational constraints on disk evolution and the initial steps towards planet formation*’

11:35 – 12:00 **Mark Wyatt (I)** ‘*Sub-mm Studies of Debris Disks*’

12:00 – 12:15 **Devid Wilner (C)** ‘*Resolved Millimeter Emission Belts in the β Pictoris and AU Microscopii Debris Disks*’

12:15 – 13:45 **Lunch Break**

(Astrochemistry)

(Chairperson: Peter Schilke)

13:45 – 14:30 **Ewine van Dishoeck (K)** ‘*New Trends in Astrochemistry in the ALMA Era*’

14:30 – 14:55 **Paola Caselli (I)** ‘*Pre-stellar Cores and Infrared Dark Clouds*’

14:55 – 15:20 **Mario Tafalla (I)** ‘*Molecules in Bipolar Outflows from Young Stellar Objects*’

15:20 – 15:45 **Nami Sakai (I)** ‘*Chemical Diversity of Low-Mass Star-Forming Cores: Class 0 to Class I*’

15:45 – 16:10 **Coffee Break**

(Chairperson: Masatoshi Ohishi)

16:10 – 16:35 **Edwin Bergin (I)** ‘*Chemistry in Star-Forming Regions: Herschel Looking towards ALMA*’

16:35 – 16:50 **Shuro Takano (C)** ‘*Nobeyama 45 m telescope legacy project: Line survey*’

16:50 – 17:05 **Bertrand Lefloch (C)** ‘*Shocks in Low-Mass Protostellar Environments: Present Lessons and Future Observations*’

17:05 – 17:30 **Yuri Aikawa (I)** ‘*Chemical Models of Star Forming Cores*’

17:30 – 17:45 **Edwige Chapillon (C)** ‘*Observations of Chemistry in Protoplanetary Surrounding Low-Mass Stars*’

17:45 – 18:00 **Hideko Nomura (C)** ‘*Diagnosing Gas Dispersal Processes in Protoplanetary Disks*’

December 6 (Thu)

(Solar System)

(Chairperson: Stephane Guilloteau)

9:00 - 9:45 **Mark Gurwell** (K) *'Planetary Atmospheres at High Resolution'*

9:45 – 10:10 **Bryan Butlar** (I) *'Observations of Smaller Solar System Objects at submm-cm Wavelengths'*

(Evolved Stars etc.)

(Chairperson: Claudine Kahane)

10:10 – 10:55 **Jose Cernicharo** (K) *'The Chemistry of Carbon and Oxygen-rich Evolved Stars'*

10:55 – 11:10 **Coffee Break**

11:10 – 11:35 **Leen Decin** (I) *'Herschel's view on late stages of stellar evolution - New enigmas to be solved with ALMA -'*

11:35 – 12:00 **Naomi Hirano** (I) *'Outflows in Late-type Stars'*

12:00 – 12:35 **Leonardo Bronfman** (I) *'From Large Scale Surveys to ALMA Observations of Massive Star Forming Regions'*

12:35 – 14:00 **Lunch Break**

14:00 – 16:00 **Poster Session**

18:30 - **Banquet**
After Dinner Talk (Norio Kaifu)

December 7 (Fri)

9:00 – 9:15 **Session for Professor Morita**

(Future Plans I)

(Chairperson: Munetake Momose)

9:15 – 9:40 **Thijs de Graauw** *'ALMA: The Challenge of Construction and Operation'*

9:40 – 10:05 **Daisuke Iono** (C) *'Future Development of ALMA'*

10:05 – 10:30 **Pierre Cox** (I) *(IRAM: Present and Future)*

10:30 – 10:50 **Coffee Break**

10:50 – 11:15 **Ryohei Kawabe** (I) *'The Large Millimeter and Sub-millimeter Telescope Project, "ALMA SPICA Synergy Telescope (ASTe)'"*

11:15 – 11:40 **Gordon Stacy** (I) *'The CCAT Project'*

11:40 – 12:05 **Min Yun** (I) *'The LMT in the ALMA Era'*

12:05 – 12:20 **Fumitaka Nakamura** (C) *'The CCS 45 GHz Zeeman Project: Magnetic Field Measurements Towards Prestellar Cores'*

12:20 – 14:00 **Lunch Break**

(Future Plans II)

(Chairperson: Mareki Honma)

14:00 – 14:25 **Takao Nakagawa** (I) *'The Next Generation Infrared Astronomy Mission SPICA'*

14:25 – 14:50 **Sheperd Doleman** (I) *'The Event Horizon Telescope: Observing Black Holes with Schwarzschild Radius Resolution'*

14:50 – 15:05 **Keiichi Asada** (C) *'The Greenland Telescope (GLT) Project'*

(Closing Session)

15:05 – 16:00 **Concluding Remarks**

A LIST OF POSTER PRESENTATIONS

A poster board will fit the A0 size poster (W: 84.1 cm H: 118.9 cm). Poster sessions are held on Monday (Dec. 3) and Thursday (Dec. 6). Good posters will be awarded.

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