Session:	**[B2A-6] S6 : Observing Facilities and International Collaborations**
Date:	August 19, 2014 (Tuesday)
Time:	11:00~12:30
Room:	Room F (Room 108)
Chair:	Ajit Kembhavi (Inter-University Centre for Astronomy and Astrophysics)

[B2A-6-1] **11:00~11:20**

[Invited] Giant Magellan Telescope: Korean Prospects

Byeong-Gon Park (Korea Astronomy and Space Science Institute, Korea)

Giant Magellan Telescope (GMT) project is one of the three next generation extremely large telescope (ELT) development projects, which is being conducted by a consortium of multiple international institutions. The diameter of the GMT is 25m where seven 8.4m circular segments form a single elliptically shaped surface. Secondary mirror of the GMT is also formed with seven 1.06m circular mirrors where each segment is aligned with matching primary segment to form a Gregorian focus. GMT will be installed at the Las Campanas Peak in Chilean Andes at an altitude of 2,550m. In 2014, GMT project passed important milestones in its project plan that includes system level preliminary design review, cost and structural review, and entered into a construction / commissioning phase. Korea joined GMT project in 2009 and Korea Astronomy and Space Science Institute (KASI) has been acting as a Founder of the GMT project representing whole Korean astronomical community. By joining GMT project, Korean astronomical community anticipates a great leap to lead the most contemporary scientific research topics in the era of ELTs. In preparation for the brilliant future, KASI strives to promote research capability of Korean community by gaining access to large telescopes of 4m to 8m in diameter, holding annual schools for students, running international fellowship programs with partner institutions of the GMT project. In addition, KASI is developing the first generation instruments of the GMT in collaboration with other partners and trying to lead the fabrication of the secondary mirrors of the telescope. Also, KASI encourages Korean industries to participate in the manufacturing of mechanical parts of the telescope such as mount, motor drives, and enclosure, and building observatory facilities where we believe there are world-leading companies in these areas in Korea.To be announced

[B2A-6-2] **11:20~11:35**

[Invited] The TMT Project and The Japanese Perspective

Masanori Iye (TMT International Corporation, Japan)

*To be announced

[B2A-6-3] **11:35~11:45**

[Invited] TMT: The Indian Perspective

G. C. Anupama (Indian Institute of Astrophysics, India)

As one of the partners of the TMT project, India is looking to supply a good fraction of the primary segments hardware, as well as contribute to the telescope control software. Fabrication of prototypes of some of these components are being undertaken by industries in India. A brief description of the various TMT related activities underway in India will be provided in the talk.

[B2A-6-4] **11:45~12:00**

[Invited] The Square Kilometre Array - One of the Great Observatories of the Next Decade

Michael Kramer (Max-Planck-Institut fuer Radioastronomie, Germany)

The Square Kilometre Array (SKA) will be constructed at the end of this decade. Upon completion, it will be the largest radio telescope in the world, covering the radio frequency part of the electromagnetic spectrum as one of the Great Observatories for the decades to come. Its construction will be done in phases, allowing science operation already while the telescope is still being completed. Apart from addressing five internationally selected Key Science Projects, the SKA will also be known for overcoming a number of technology challenges. This talk will summarize the status of the SKA Project, its science and the technology solutions that will be employed.

[B2A-6-5] **12:00~12:15**

The Australian SKA Pathfinder Telescope

Lisa Harvey-Smith (CSIRO Astronomy & Space Science, Australia)

The Australian Square Kilometre Array Pathfinder (ASKAP) is a cutting-edge radio interferometer comprising 36 x 12 metre antennaslocated at the Murchison Radio-astronomy Observatory in Western Australia. In the first five years of operation, approximately 75% of ASKAP's time will be spent conducting large-area sky surveys in the frequency range 700 to 1800 MHz. Ten science survey teams have been assembled, comprising over 600 astronomers around the world. As part of the international SKA project, ASKAP will later form the core of the of the Phase 1 SKA Survey telescope in Australia.
ASKAP features a new type of radio astronomy receiver called a phased array feed, which gives the telescope its extraordinarily fast survey capability through its extremely wide field-of-view. Six antennas have already been fitted with prototype phased array receivers and are currently being used as a powerful commissioning instrument called the Boolardy Engineering Test Array (BETA). A suite of 30 second-generation phased array feeds are under construction and will be fitted to ASKAP antennas in 2015.
The science goals of ASKAP include:
• Galaxy formation and gas evolution in the nearby Universe through extragalactic HI surveys
• Evolution, formation and population of galaxies across cosmic time via high resolution, confusion limited, continuum surveys
• Characterisation of the radio transient sky through detection and monitoring (including VLBI) of transient and variable sources, and
• Evolution of magnetic fields in galaxies over cosmic time through polarization surveys.
The construction of ASKAP is almost complete. The observatory is fully established in a region that has a legal framework under both Federal and State legislation that protects the radio-quiet environment. All roads, on-site buildings, fibre-optic networks and supercomputing facilities are completed. The 36 dishes are installed. Telescope control software and data pipelines have been released. The data archive is in an advanced stage of development.
This talk will describe ASKAP's capabilities and scientific goals, report on the latest commissioning results, discuss the challenges faced and lay out plans for the commencement of early science operations in 2015.

[B2A-6-6] **12:15~12:30**

[Invited] The LIGO-India Project

Tarun Souradeep (IUCAA, India)

Direct detection of gravitational wave (GW) signal from astrophysical events, such as,mergers of compact objects, is widely believed to be imminent in this decade given the advent of advanced Laser interferometric Gravitational wave observatories (LIGO). For the astronomy community, it promises an entirely new window into the universe to add to multi-messenger astronomy. However, for meaningful electromagnetic follow up, it will be important to be locate the GW sources on the sky. I will present LIGO-India, a proposal for a GW observatory on Indian soil that would be provide this critical element to the launch of GW astronomy orldwide. The proposal has been recommended as one of the mega-science projects by the Planning Commission of India and currently awaits a final approval from the Indian government.