Advanced Concepts and Time Transfer Session Summary
Chair: Hiroo Kunimori

New applications using all or part of SLR instrumentation were the subjects of papers presented in this session. SLR was born and has grown up in the fields of geodesy, geodynamics, and orbital mechanics, and since then has interacted with many other fields to open up new applications and users. In addition to the obvious value of SLR as a contributor to fundamental physics, geodesy and the reference frame, each organization has its own interests to use SLR for different applications. Here we have 5 oral papers and 3 poster papers including Time Transfer, Communications, Radio Astronomy, Lidar and NEO Tracking.

Time Transfer
"Progress on Laser Time Transfer Project" by Y. Fumin et al described the China LTT mission on a satellite, hopefully to be approved in the next three months. It uses dual SPAD, TDC module and Laser Retroreflector Array. The engineering model and testing are in progress. The experiment is now planned only within the China network.
"T2L2 Status Update" by E. Samain, F. Deleflie et al gave news of the Time Transfer by Laser Link project, a LASSO follow-on mission at last approved for the JASON-2 mission for 2008 launch, 30 years after the concept was made. Tests using the space segment engineering model and the ground prototype are ongoing, and an international network is being modeled.
"New Application of KHz Laser Ranging: Time Transfer by Ajisai" by T. Otsubo et al presented a simulation study for AJISAI TT revised 14 years after the concept was introduced in equation form, including a search algorithm and link budget in the KHz SLR era.

Communications
"Satellite Tracking Demonstration on Ground Osing 100mm Aperture Optical Antenna for Space Laser Communication" by H. Kunimori et al described how SLR using optical communications equipment were present in a course of development of a next-generation Laser Comm terminal, and present-generation LEO-GND Laser Comm was described.
Also, in another session, a free space Laser Comm experiment over ocean over 10 miles was presented.

Radio Astronomy
"Possibility of Laser Ranging Support for the Next-Generation Space VLBI Mission ASTRO-G" by T. Otsubo et al discussed the role of SLR in POD at altitudes higher than GPS, and the engineering problems.

LIDAR
"LIDAR Experiments at the Space Geodesy Facility, Herstmonceux, UK" by G. Appleby et al.

NEO Tracking and Monitoring
"Electron Multiplying CCD Camera Performance Tests" by D. Lewova et al.

"Possibility of Near Earth Objects Distance Measurement with Laser Ranging Device" by M. Abele and L. Osipova.