

Summary of The JUPITER TROJAN 2016 Symposium

4th July 2016

final update: 14th July 2016

◆ Symposium Outline :

- Title : JUPITER TROJAN 2016 - New Insights into Early Solar System Evolution
- Dates : 2nd (Sat.)– 4th (Mon.) July 2016
- Venue : 2F Conference Hall, ISAS/JAXA Sagamihara Campus
- Organized by : Solar Power Sail Working Group, ISAS/JAXA.

◆ Statistics of the Symposium :

- Participants : Total 70 (59 on site, 11 WebEx)
 - Day-1: 48 (44 on site, 4 WebEx),
 - Day-2: 55 (45 on site, 10 WebEx)
 - Day-3: 43 (38 on site, 5 WebEx)
- Nationalities : Japan (45),
International (25: USA, France, Germany, Italy, Sweden, Brazil)
- Presentations : 35 Orals (International:21, Japan:14)
11 Posters (International:1, Japan:10)
 - 6 theoretical and modeling studies (solar system formation, thermal evolution of interior of icy/primitive bodies)
 - 5 ground-based and in-flight observation studies
 - 7 astromaterial studies (meteorites, IDPs) and laboratory experiments
 - 9 mission concept studies
 - 10 instrumentation studies
 - 9 posters of current status by the Solar Power Sail Working Group

◆ Summary of Special Discussions :

Speakers (Panelists): Paul Abell (NASA/HQ, JSC, USA), James Bell (ASU, USA), Jean-Pierre Bibring (IAS, France), Michael Brown (Caltech, USA), Noel Grand (CNRS, France), Junichiro Kawaguchi (JAXA/ISAS, Japan), Stephan Ulamec (DLR, Germany), Hisayoshi Yurimoto (Hokkaido University & JAXA/ISAS, Japan)

- Jupiter Trojans are among the key targets to understand solar system origin and evolution, especially for constraining the theoretical models of solar system

formation. Thus, a high priority should be placed to visit and even land on Jupiter Trojan asteroids with robotic space missions, as well as to continue to advance ground-based and space-based observations and laboratory experiments to interpret those results, with significant international and interdisciplinary collaboration.

- There has been a strong will from the international science community to visit and explore the outer solar system, including the Jupiter Trojans. This is recognized by several national space agencies in their strategic plans. In order to accomplish such long-term missions, however, it is important for the success of the mission and the associated technology development to involve and train younger researchers. This could be accomplished by performing new investigations/experiments during the cruising phase, and/or by adding younger engineers and scientists as mission team members throughout all the mission phases.
- In the exploration of outer Solar System bodies to date, most progresses has initially been achieved by conducting *in situ* flyby, orbital, or surface investigations. However, sample return and detailed sample analyses back on Earth is still essential for a deeper understanding of the evolution of outer Solar System bodies. Thus, outer Solar System sample return missions should be considered whenever they are judged to be technically and programmatically feasible.
- ◆ **The Way Forward :**
- International science meetings on the Jupiter Trojans should be continued on a regular basis. Such meetings should cover interdisciplinary aspects of these bodies, including new ground-based and space-based observations, relevant laboratory experiments and theoretical studies, and new missions and instruments for the *in situ* study of the Jupiter Trojans. The next meeting is expected to be held in 2017 at a location TBD, potentially in conjunction with the International Primitive body Exploration Working Group (IPEWG) meeting.
- The summary report of this meeting should be distributed to the related space agencies and institutes. Key participants and their addresses will be listed soon.