

## Summary Notes for ILWS-2013 Workshop

The International Living with a Star (ILWS) 2013 workshop held in Irkutsk, Russia, drew a broad international participation from several countries around the globe. ILWS seeks global cooperation for space instrumentation and scientific analysis. The workshop included a range of presentations covering space agency plans, large and small missions and ground based observing networks. Overall, it was a week of excellent scientific talks, fruitful discussions and amazing side trips.

Host of this year meeting, Institute of Solar-Terrestrial Physics of Russian Academy of Sciences (ISTP SB RAS), presented an impressive review of a broad range of facilities operated by this organization, which enables the research and provides the experimental measurements for areas relevant to Space Weather and Space Climate. The institute takes part in some international programs. A broader participation in existing and future international programs and a closer collaboration with international community in data assimilation and analysis is further encouraged.

The workshop saw number of presentations on future space missions aimed at studying the different aspects of solar, heliospheric, and magnetosphere-ionosphere physics. To take a full advantage of these opportunities, the community is strongly encouraged to work closely together on aspects of Sun-Earth system addressed by these future missions. For example, a suggestion was made to enhance the use of GPS and GLONASS signals for remote sensing the properties of Earth ionosphere (this suggestion was made by Dr. Alexander Pavelyev of Kotelnikov Institute of Radio Engineering and Electronics). In addition, a close coordination/collaboration of ground based solar observatories with space-born missions is seen beneficial for the Space Weather research and forecast. Such collaborations are strongly encouraged.

New impressive scientific results presented during the workshop indicate a growing understanding of different aspects of Space Weather characteristic to specific subsystems (e.g., Sun's atmosphere, interplanetary space, Earth's magnetosphere etc). It seems that the time is right now to reach across these boundaries to form a more comprehensive understanding of Sun-Heliosphere-Planets system and the processes collectively called Space Weather.

Sessions addressing heliospheric missions also addressed upcoming opportunities for coordinated science and a proposal was drafted for the creation of an ILWS working group. This group would consider opportunities for future scientific coordination in heliospheric studies with Solar Orbiter, Solar Probe Plus, Interhelioprobe and SPORT, together with missions in Earth orbit and ground based facilities (see proposal text by Stuart Bale and Milan Maksimovic).

Results on radar measurements presented in oral and poster presentations, noted the substantial progress in ground-based MIT observations in the Asian region. The discussions at the round table encourage international cooperation in the framework of SuperDARN cooperation and space missions THEMIS, ERG, CHAMP.

In response to the workshop summary remarks, additional proposal was made by Dr. Yong Liu to form a separate Geospace observational working group, composed of representatives from both space and ground observations on magnetosphere, ionosphere and Earth atmosphere. This working group will facilitate the data sharing for ground stations like radars and the space missions including RBSP, CLUSTER and others. The working group will also work on future missions including SWARM (ESA), MMS (USA), ERG (Japan) and MIT for the future campaigns of the coordinated observations on the geospace.