

ILWS report of Ukraine 2010

In the framework of the ILWS scope of interests Ukraine continues its traditional activities in the following fields:

1. Solar physics — radioastronomy, spectroscopy, modelling of photospheric, chromospheric and coronal wave processes, modelling of quasistationary coronal structures, theoretical investigations of solar dynamo
2. Heliospheric physics — theoretical modelling of large-scale structures in the solar wind, investigation of solar wind turbulence
3. Magnetospheric physics — investigation of ULF wave processes, investigation of magnetosphere-ionosphere coupling
4. Ionospheric physics — investigation of atmospheric gravity waves, active ionospheric experiments, ionospheric sounding
5. Space weather — forecasting of geomagnetic indices, risk assessment of damage to spaceborne equipment due to space weather
6. Instrumentation — development and production of high-precision low-mass instruments for electromagnetic measurements, development and production of instruments for plasma measurements, development and production of spacecraft platforms for solar and ionospheric missions

Notable research topics are: investigation of wave processes from the Sun down to the neutral atmosphere, space weather forecasting, and manufacturing of high-precision low-mass instruments for electromagnetic and plasma measurements. In addition to these activities, Ukraine also participates in the following projects:

1. Ionosat — ionospheric space mission (Ukraine is leading the project)
2. Resonance — magnetospheric space mission (Ukraine contributes 1 onboard scientific instrument and provides part of background theoretical research)
3. Obstanovka — monitoring of the electromagnetic environment around the ISS (Ukraine is co-leading the project)
4. AFFECTS — TEC forecasts over Europe (Ukraine is providing forecasts of geomagnetic indices)

Last but not least, Ukraine is involved in education and public outreach:

- publishing scholarly and popular books on solar-terrestrial physics;
- organizing national and international conferences on solar-terrestrial physics;
- organizing summer schools on solar-terrestrial physics;
- promoting solar-terrestrial physics in mass media (newspapers, TV and Internet);
- educating children in space sciences;
- teaching solar-terrestrial physics in universities.