MEMBER COUNTRY: **UKRAINE**
National Report to SCAR For year : 2013/2014

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Scientific Research Program						
AAA **1)** **2)**						
AntEco **1)** **2)**						
AnT-ERA **1)** **2)**						
AntClim21 **1)** **2)**						
PAIS **1)** **2)** **SERCE** **1)** **2)**						
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Other Groups (optional)						
SOOS						

Geological and Geophysical Research

1. Conducting studies of the geological structure of the West Antarctic and evaluating of its mineral resource potential

1. Determination of Wo gravitational potential at Prudman mareograph dipstick to establish a unified altitude system at the station.
2. Conduct of tectonomagnetic observations on geodynamic testing ground in UAS Akademik Vernadsky water areas.
3. Preventive measures and calibration of AIA complex magnetic observatory equipment at Vernadsky.
4. Adjustrment of AIA magnetic observatory magnetovariational equipment, carrying out of tectonomagnetic observations on geodynamic testing ground, works on tidal Prudman station for simulation of dynamic ocean surface in the Antarctic Peninsula water areas.

2. Studies of surface volumes of Argentine archipelago island glaciers. Creation of large-scale plans (1: 1000) of the Argentine Islands archipelago for use in compiling Vernadsky station GIS. Carrying out geodynamic observations in Vernadsky station region.

1. Terrestrial laser scanning of glaciers on Galindez Island and Winter Island.
2. Field phototheodolite and surveying work on quantification of glaciers on Galindez Island, Winter Island, the Barchans Islands (digital phototheodolite survey, core network measurement).
3. Air survey of the island glaciers adjacent to Vernadsky station using an unmanned flying vehicle (UFV) Trimble UX5.
4. Field surveying on the Argentine islands archipelago with the aim of sparse horizontal and vertical bridging of aerial photos for the further preparation of topographic maps on a scale of 1: 1000 (GNSS - measurement of the basic network). Field GNSS- observations at points of geodetic network on Rock, Petermann and Yalour Islands.

3. Geodynamic evolution of West Antarctica based on the results of geological and geophysical modeling

1. Preparatory phase:
A) writing of research project;
B) setting of equipment for observation;
C) preparation for field works
2. Field works.
3. Complex processing and interpretation of tectonic and physical measurements. Complex analytical studies of rock samples, interpretation of results.

4. Comprehensive geological and geophysical monitoring research: establishment, testing and transfer of the complex to monitor components of the atmospheric electricity.

1. Preparatory phase:
A) Setting of equipment for test observations of the atmospheric electricity field;
B) Consultations of geophysics - winterer regarding fluxmeter operating rules.
2. Field works.
Installation and adjustment of fluxmeter for monitoring measurements of atmospheric electricity. Initial processing of monitoring measurements of atmospheric electricity.

Biological Research

1. Biological processes in coastal Antarctica: population biology, ecological genetics, and biochemistry.

1. The study of modern vegetation state especially the area of distribution of *Deschampsia antarctica*, as well as a variety of mosses and lichens formations in the areas of archipelago of smaller islands near Uruguay Island, Corner Island, on islands on the South from Petermann Island, small islands of the group Yalour, the Barchans, Shelter, Fanfare, Black, Leopard Islands, Irizar Island and islands situated to the south from it, the south part of Grotto Island and the island to the south-west from Irizar Island.

2. Schematic mapping of investigated vegetation plots in the layouts of the relevant areas using GPS.

3. Study of moss fields with a view of finding the most developed. Gathering moss bank specimens, main mosses and water samples along ecological gradients. Areas of investigation: Galindez Island, Skua Island, Corner Island, Petermann Island, and Berthelot Island.

4. Fixation of samples of *Colobanthus* buds and *Deschampsia* flowers

5. Collect *Deschampsia* root area and a few live plants; its packaging and delivery in sterile paper bags.

2. Assessment of marine protected areas «Stella Creek» and «Skua Creek». Laying of new marine protected areas.

1. Laying of new sites for organization of long-term observations of the state of benthic communities, assess the impact of anthropogenic and natural factors on the state of biodiversity of marine and freshwater coastal ecosystems.

2. Study the state of coastal terrestrial ecosystems, the influence of plant communities, vital activity of birds and mammal to migration of micro- and macro elements and coastal benthic groups.

Medical and Physiological Research

1. Investigation of the dynamics of personal psychological characteristics and psycho-emotional preferences of winterers in the initial and final stages of adaptation at the Antarctic Vernadsky station.

2. Investigation of indicators of personal psychological characteristics and psycho-emotional preferences of the 19th UAE winterers the Antarctic Vernadsky station.

Development and implementation of new technologies

Investigation of biological degradation processes of organic wastes of different origin for the protection of the environment on Vernadsky station.

Sampling for research on the destruction of organic and inorganic substances (purification of waste water, recycling of household organic waste and diesel fuel waste) using Antarctic microorganisms.