

THE ARCTIC AND THE ANTARCTIC: ARE ANY ANALOGUES PERMISSIBLE?

Valery Lukin,

Arctic and Antarctic Research Institute,
Russian Antarctic Expedition, Roshydromet, St.Petersburg, Russian Federation

FACTORS

ASTRONOMICAL

22 March
22 June
22 September
22 December

THE ARCTIC

Polar day and night

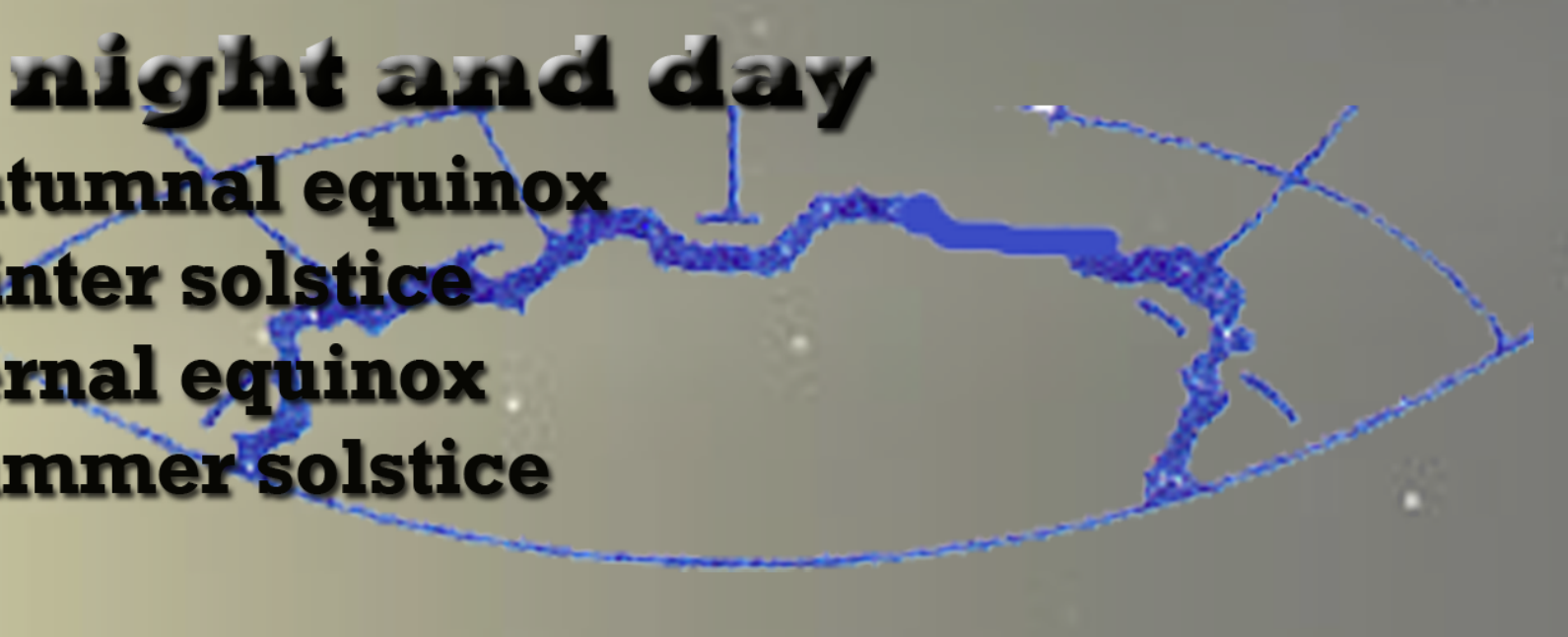
Day of vernal equinox
Day of summer solstice
Day of autumnal equinox
Day of winter solstice



ANTARCTICA

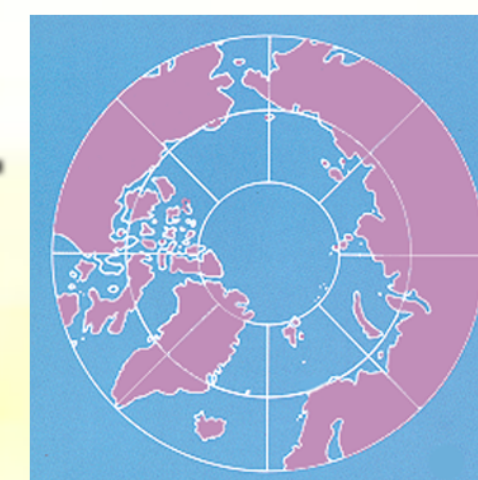
Polar night and day

Day of autumnal equinox
Day of winter solstice
Day of vernal equinox
Day of summer solstice

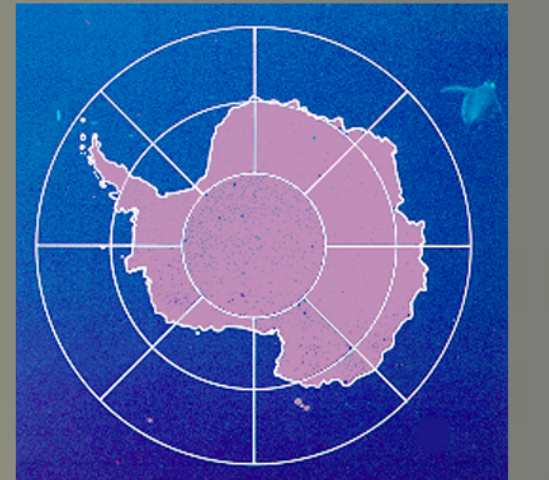


GEOGRAPHICAL

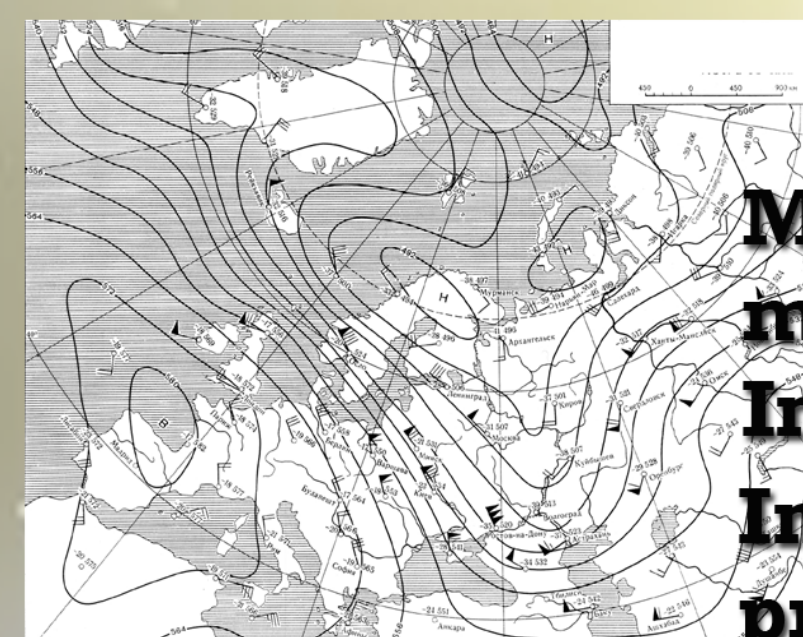
Ocean surrounded by continents.
Concave type of the Earth's crust.



Continent surrounded by oceans.
Convex type of the Earth's crust.



CLIMATIC



Minimum air temperature at the margins of the region (land).
In the NP area $-t > -45^{\circ}$
Interaction of two high atmospheric pressure centers of action and two low atmospheric pressure centers of action

The air temperature over the SP $> -89.2^{\circ}$

High air pressure center over the continent surrounded by low air pressure areas over the ocean.

BIOLOGICAL



Presence of tundra with developed vegetation forms.
A large variety of terrestrial mammals, including predators.
Abundant biodiversity of marine species of living organisms.



The very first vegetation forms of vegetation (moss, lichen).
Complete absence of terrestrial mammals.
The biodiversity of marine living organisms is less than in the Arctic, but much wider compared to biodiversity of terrestrial species.

DEMOGRAPHIC

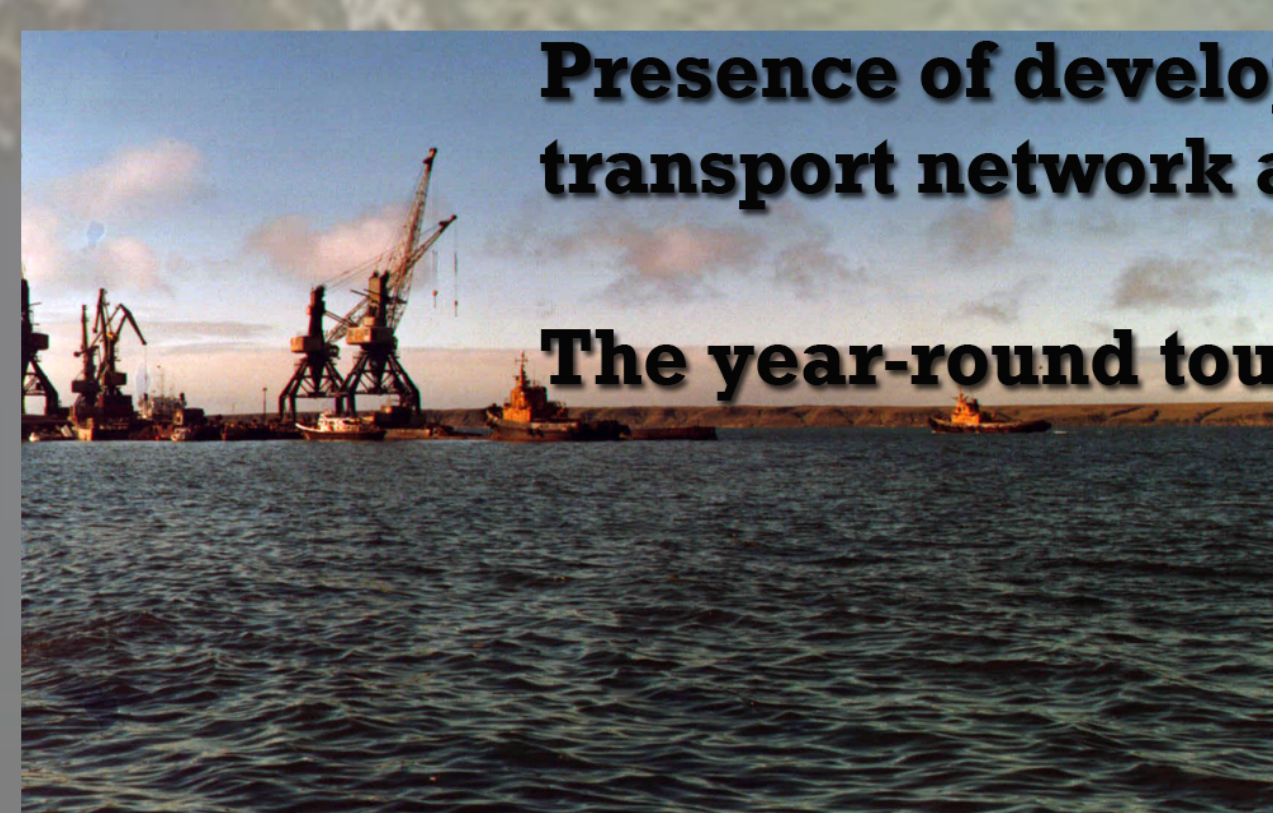


Presence of indigenous peoples of the North.
Permanent population coming for living and working in the region.
Presence of cities and large settlements.

Absence of indigenous population. Rotating personnel of the research stations, arriving from the continents.



ECONOMIC



Presence of developed extractive industry, transport network and agriculture.
The year-round tourism.

Complete absence of industry and agriculture.
Marine and air transport network exists only in the summertime.
Tourism in the summertime.



MILITARY



Presence of permanent military bases of Russia, the USA, Canada and Norway. Presence of nuclear-weapons storage.

Complete absence of military bases and nuclear weapons.



ENVIRONMENTAL

Strong anthropogenic environmental impact in the areas of permanent man activity. Presence of burials of radioactive wastes.



The anthropogenic impact is localized to places of location of Antarctic stations and bases. Complete absence of burials of radioactive wastes.

POLITICAL

Presence of territories of sovereign states - UN members with their own national legislation the Arctic Council.



The legal status of the territories is not determined. The Antarctic Treaty determines the status of the international management of the region, including marine space to the south of 60° S. The UN Convention on the Law of the Sea of 1982 is in force in the ocean.



INTERNATIONAL ARCTIC TREATY - ?