

Polar glow

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What is the polar glow?

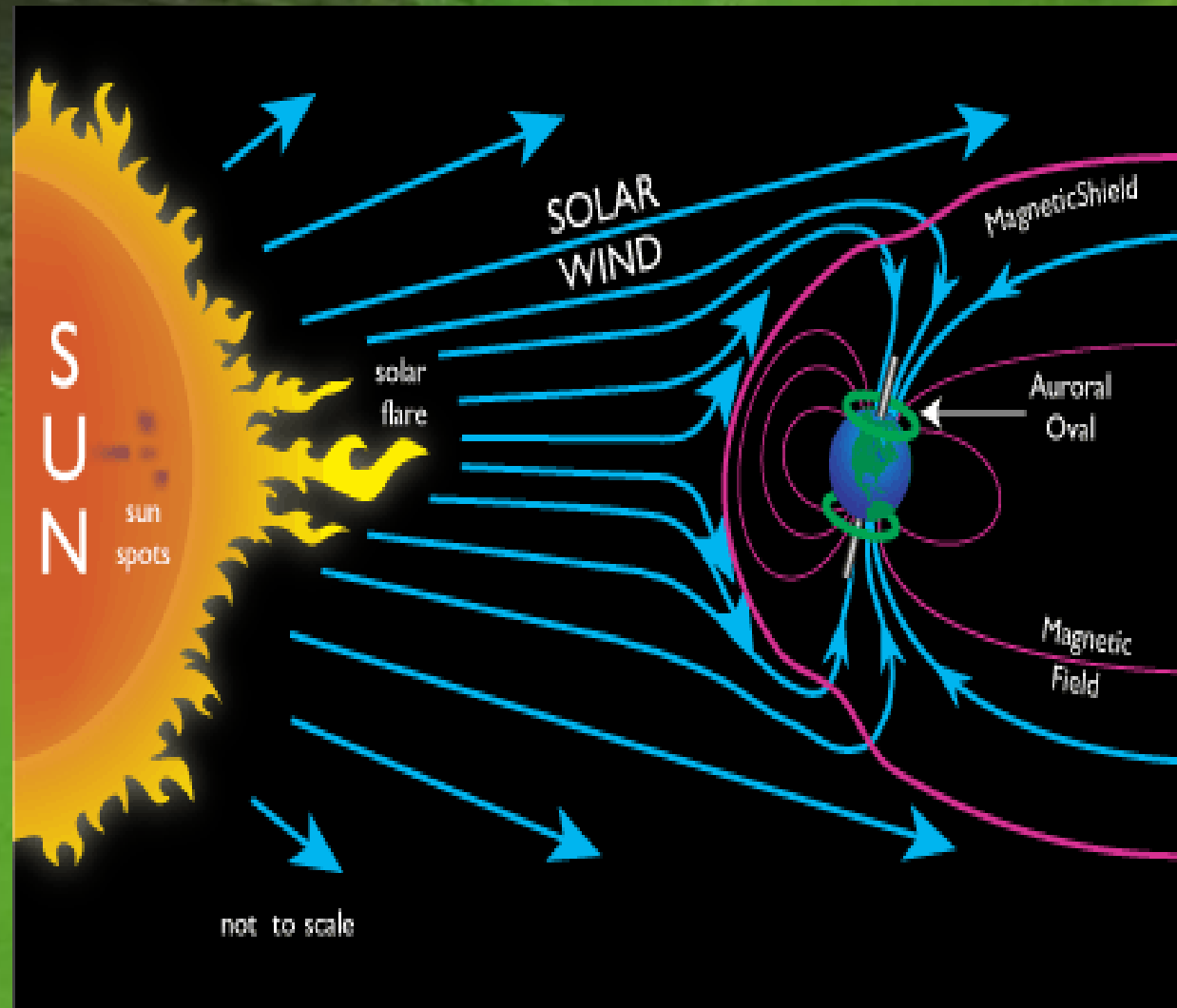


- polar glow is light event occurring in the atmosphere at heights from 80 to 1000 km, most often at a 100 km



How does it come into being?

- polar glow is formed by the action of charged particles of solar wind upon entering the Earth's atmosphere or into the atmosphere of another cosmic body





Where to find it?

- polar glow occurs (sa vyskytuje) in the north but also in the southern hemisphere
- for fascinating game of lights you can go to the north of Scandinavia, Canada or Spicberg
- the most visited countries offering this heavenly theater are Norway, Iceland or Sweden

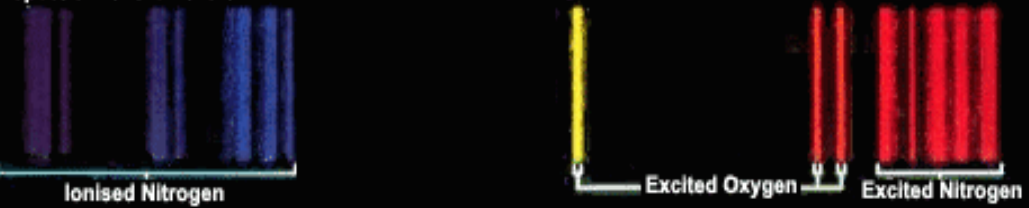
What does it look like?

- the polar glow spectrum is linear, its color corresponds to the particles that emit it (vyžarovat')

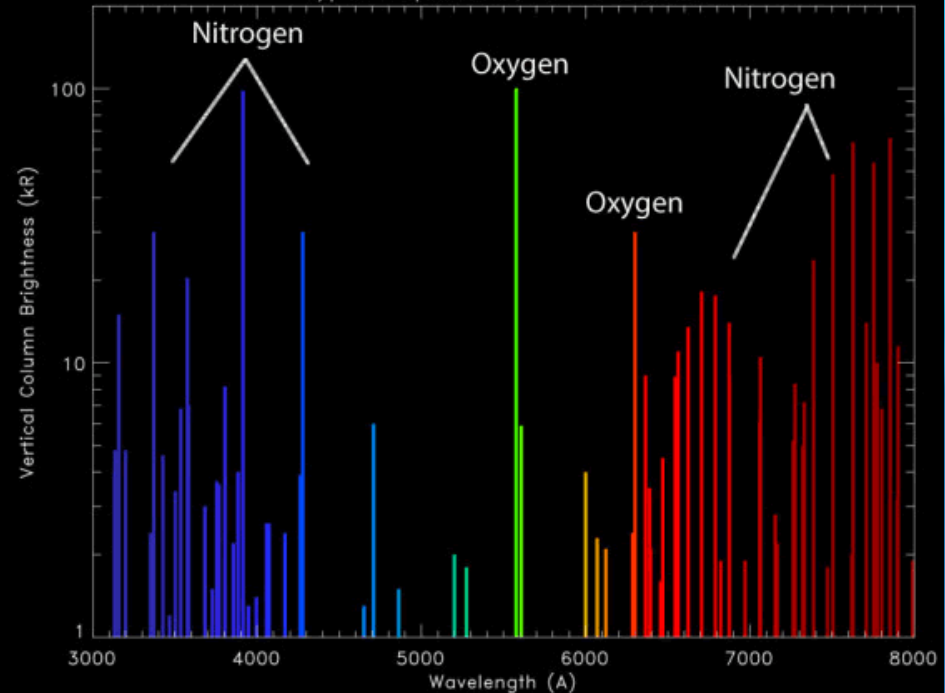
Spectrum of the Sun



Spectrum of the Aurora



Typical Spectrum, IBC-3 Aurora



- the red color is emitted (vysielaaná) by oxygen atoms from over 200 km
- in the lower layers, the radiation of nitrogen is crimson





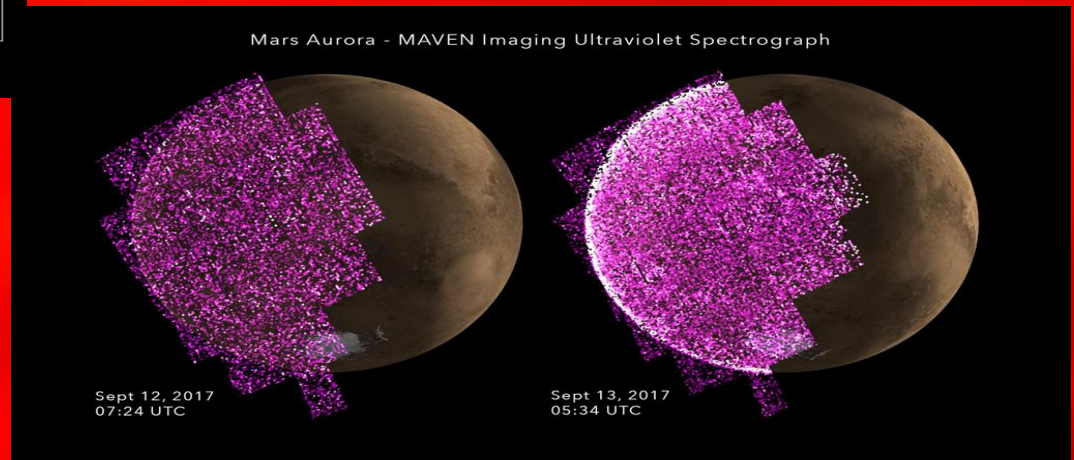
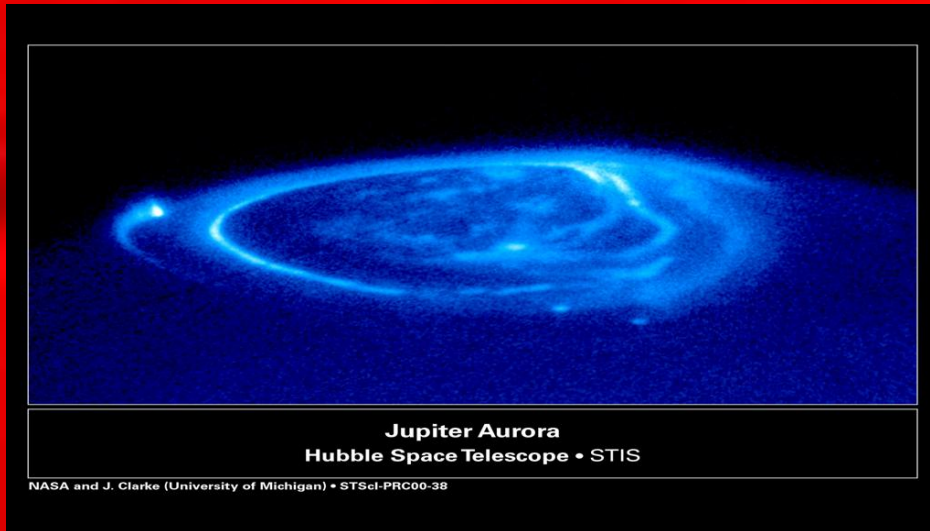
- at lower altitudes (výškach), oxygen emits (vyžaruje) an intense green color



- the blue color is caused by nitrogen atoms in the range of 100 to 200 km

Where else can we find it?

- polar glows were not captured only on Earth, but also on planets like Mars, Jupiter, Saturn, Uranus and Neptune



Saturn

- the polar glow of Saturn differs from polar glows on other planets
- it arises (vzniká) by stretching atmospheric gas particles with the planet's magnetosphere
- the result of this encounter (stretnutia) is the release of energy in the form of radiation in the ultraviolet portion of the spectrum
- on Saturn, thanks to the irradiation, the whole night sky and the storms are gaining in intensity, caused by the pressure of the solar wind
- the polar glow of Saturn changes every day, the radiation is increased when the energy-filled ring at both poles of this planet diminishes on average (zmenšívá průměrně)

Jupiter

- - the stability of the Jupiter polar glow is related to the persistent (vytrvalou) activity of Io volcanoes
- - part of the outgassed gases escape them into the cosmic space where the oxygen and sulfur (síra) atoms are ionized
- - the magnetic field of Jupiter catches these charged particles, they are further accelerated (ďalej urýchľované) and penetrate (prenikajú) into a lower atmosphere in the polar regions
- - this mechanism ensures (zaist'uje) almost always the active polar glow on Jupiter
- - the power and energy of the Jupiter polar glow is far superior to everything we know about Earth's polar glow

Myths and legends

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- Inuiti, in the past, considered polar glowing torches (pochodne), by which their ancestors (predkovia) illuminate the narrow bridge into the heavenly kingdom, so that the souls of the dead can find their way
- in medieval Europe they were considered the breath of heroic warriors
- they enjoyed sacred respect in Norway, but in many countries it was considered, like comets, to be a precursor (predzvesti) to plague, war or death

The background is a vibrant blue field filled with a complex network of thin, glowing white and light blue lines that crisscross the entire frame. Scattered throughout this network are numerous small, semi-transparent squares in various shades of blue and white, some appearing as bright points of light. The overall effect is one of dynamic energy and digital connectivity.

**Thanks for paying
attention**