

The planet Earth is surrounded by a small layer of gas that we call the **atmosphere**. The atmosphere has many different layers, but the one we are most interested in, is the **IONOSPHERE**.

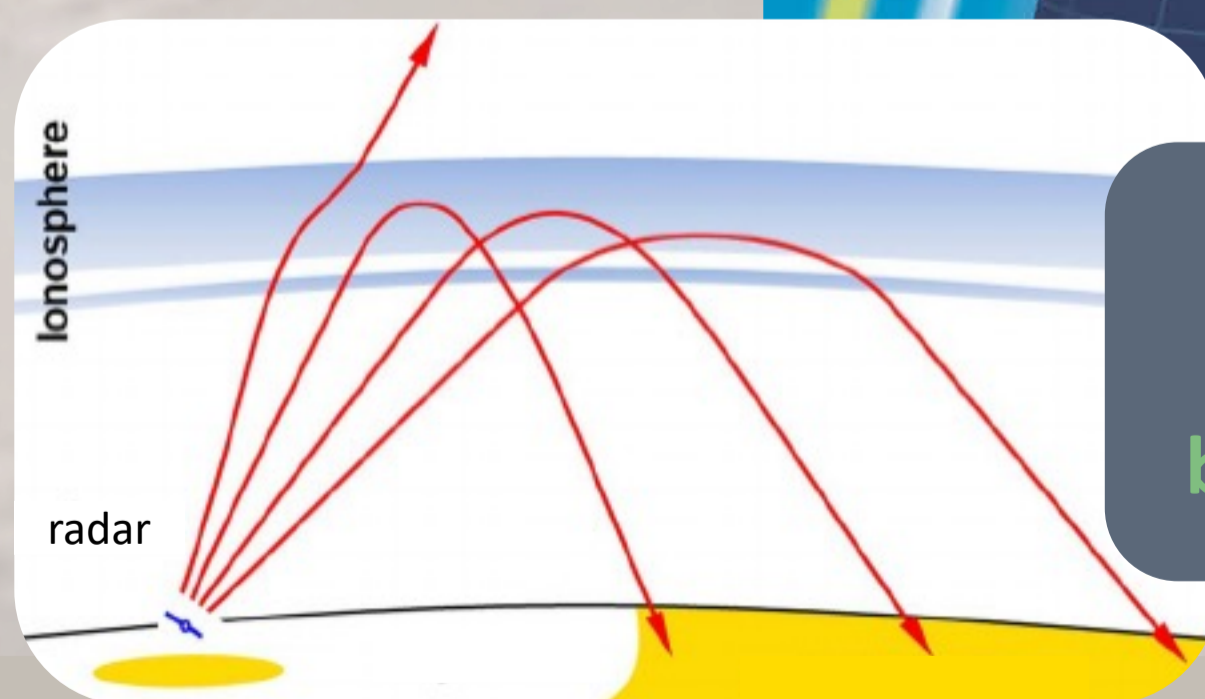
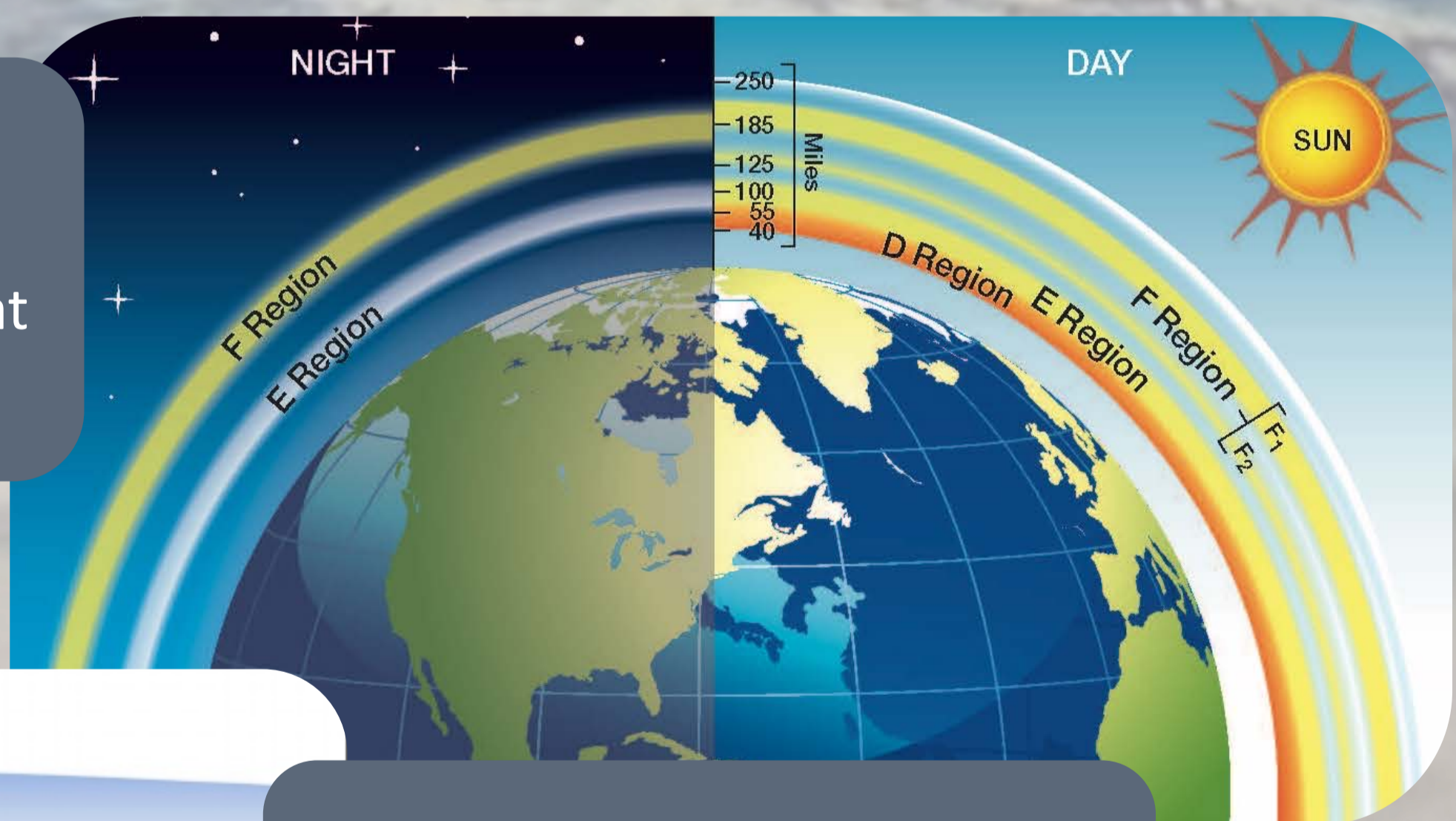
The ionosphere is a special layer because it contains **charged particles**. These particles have an electric charge and can carry electricity like some metals can.

The ionosphere is found around **50 to 1000 kilometers** above the surface and is created by the Sun's radiation. The radiation makes electrons escape from an atom, making an **ION**.

The number of ions in the ionosphere can change from day to night and from winter to summer. **Why do you think that might be?**

WHAT IS THE IONOSPHERE?

The ionosphere has **three layers** named D, E and F. At SuperDARN we mainly look at the E and F regions



The ionosphere has special properties that means it can **bend and reflect radio waves**.

We send radio waves up to the ionosphere and hope that some will be bent back down towards Earth and reflect off the ground, and some will reflect off dense patches in the ionosphere. We can receive the returning radio wave and turn it into **scientific data that tells us properties of the ionosphere**.