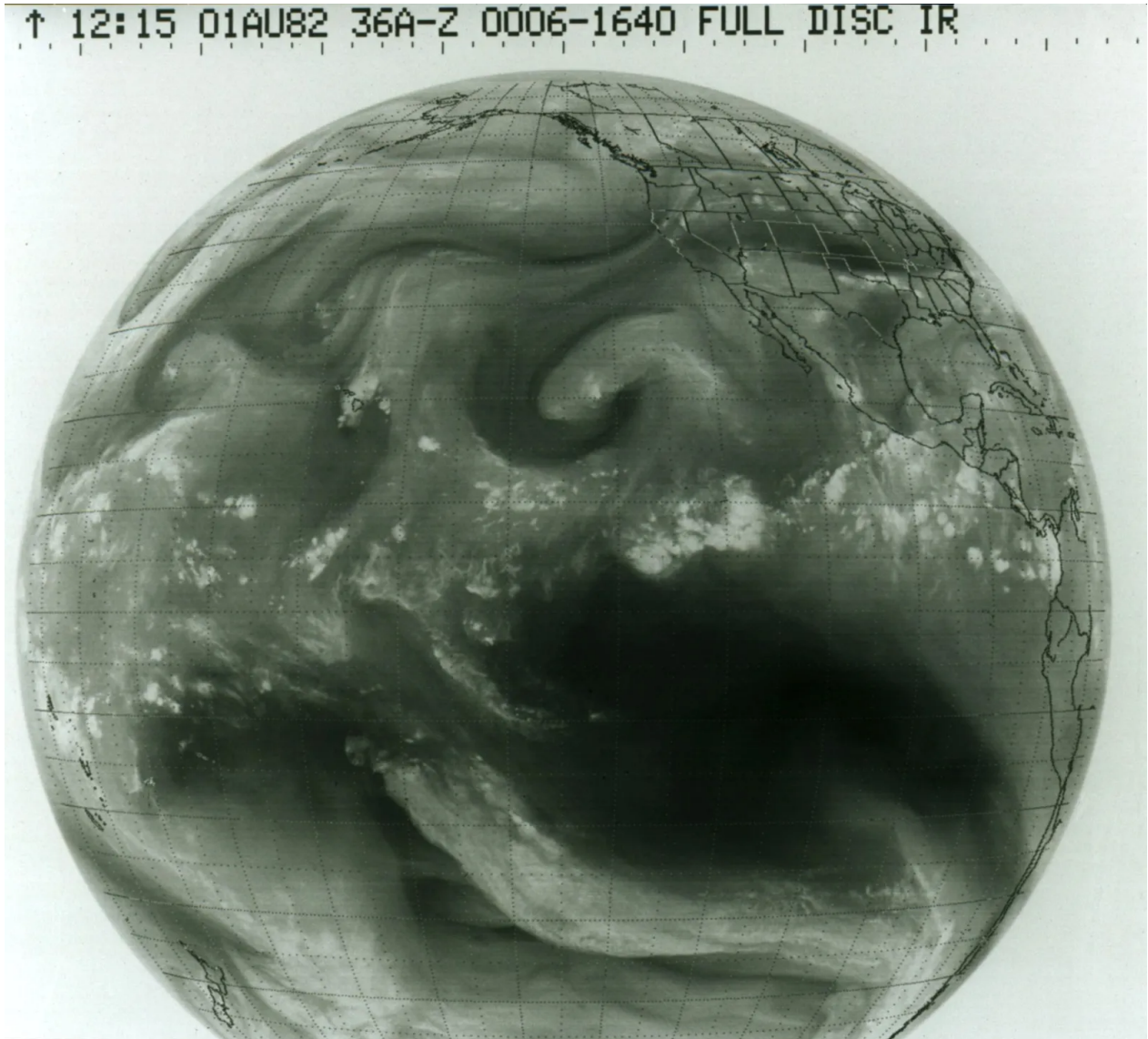


Water vapor

By Lennart Kiil



Water vapour in the atmosphere seen by the GOES weather satellite. Water vapour is invisible, but the satellite measures the heat radiation it emits. Bright areas have a lot of water vapour high up, dark areas are dry.

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Water in its gaseous state.

Water has three states: ice, liquid and vapor. Clouds and fog are not water vapor, but liquid water. Water vapor is invisible.

Water vapor is the primary natural [greenhouse gas](#) in the atmosphere. It accounts for approximately two thirds of the natural greenhouse effect.

Like other greenhouse gases, water vapor absorbs infrared radiation from the earth, and reflects some of it back to the surface. Without the greenhouse gases the Earth would loose all of its heat to space and freeze.

Water vapor is part of the [water cycle](#): When the sun heats the oceans, rivers and lakes, some water evaporates into the air, becoming vapor. Water also evaporates directly from ice and the soil.

Plants produce water vapor, this process is called transpiration. In the atmosphere the water vapor eventually cools and turns back into liquid forming clouds, this process is called condensation. When the atmosphere cannot hold any more water, it returns to the Earth's surface as rain or snow. This is [precipitation](#).

Human activities do not directly increase the content of water vapor in the atmosphere. However, hot air can contain more water vapor than cold. Therefore human activities that increases the temperature of the atmosphere near the ground, will cause more water to evaporate. In this way [anthropogenic](#) warming is further enhanced by an increased content of water vapor in the atmosphere. However, this [positive feedback](#) effect may be partly offset by more clouds reflecting more sunlight.

How to cite this entry

Lennart Kiil: "Water vapor". Climate Encyclopedia, climate-encyclopedia.com/water-vapor, retrieved 24 October 2026.

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