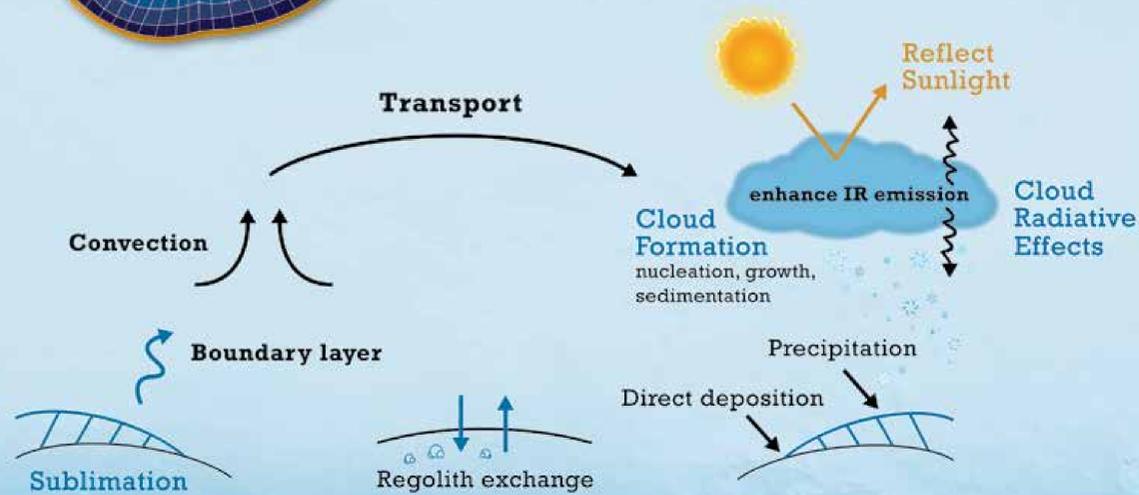


Mars' WATER CYCLE



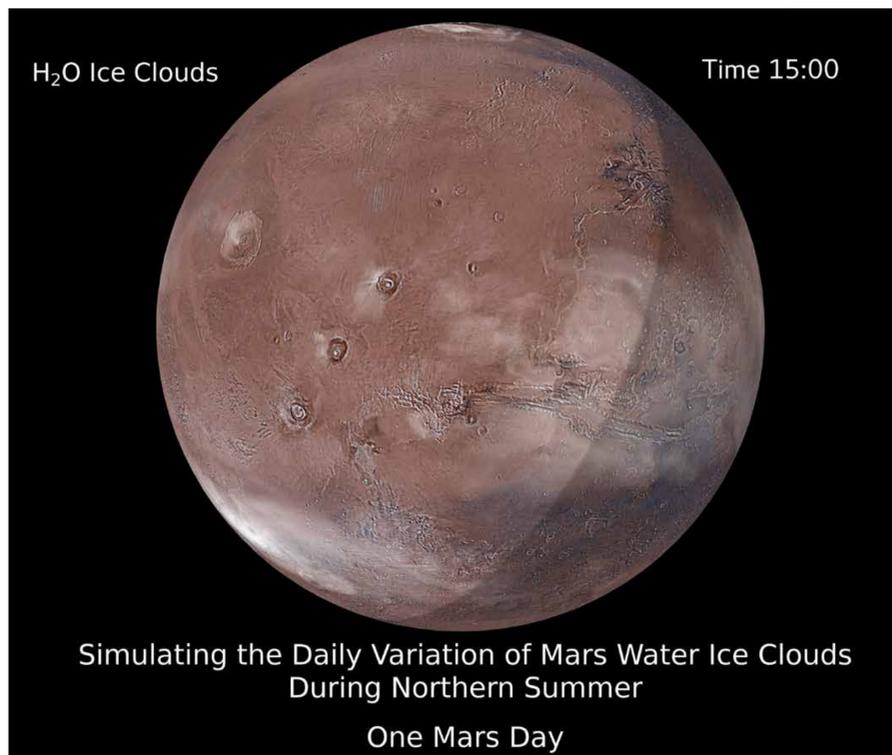
An illustration of the Martian water cycle as simulated by the global climate model developed at NASA's Mars Climate Modeling Center at Ames Research Center. *Christina Olivas, San Jose State University*

Simulating the Water Cycle and Cloud Formation on Mars

Modern global climate models (GCMs), adapted to Mars, yield critical insight into the importance of water in the Martian climate system, throughout the planet's history to the present day. Together with spacecraft observations of the Martian atmosphere, the GCM developed at NASA's Mars Climate Modeling Center at Ames Research Center is used to investigate several questions relating to the water cycle and how water ice clouds affect the Martian climate. Among other results, we've found that although Martian clouds are thin compared to Earth clouds, their radiative effects significantly change the thermal structure of the atmosphere and intensity of its global-scale wind systems. In this way, they help control the movement of water around the planet.



Melinda Kahre, NASA Ames Research Center



Simulated water ice clouds over the Tharsis Montes volcanoes during a summer afternoon on Mars. The simulation was run on NASA's Pleiades supercomputer. *David Ellsworth, Alex Kling, NASA/Ames*