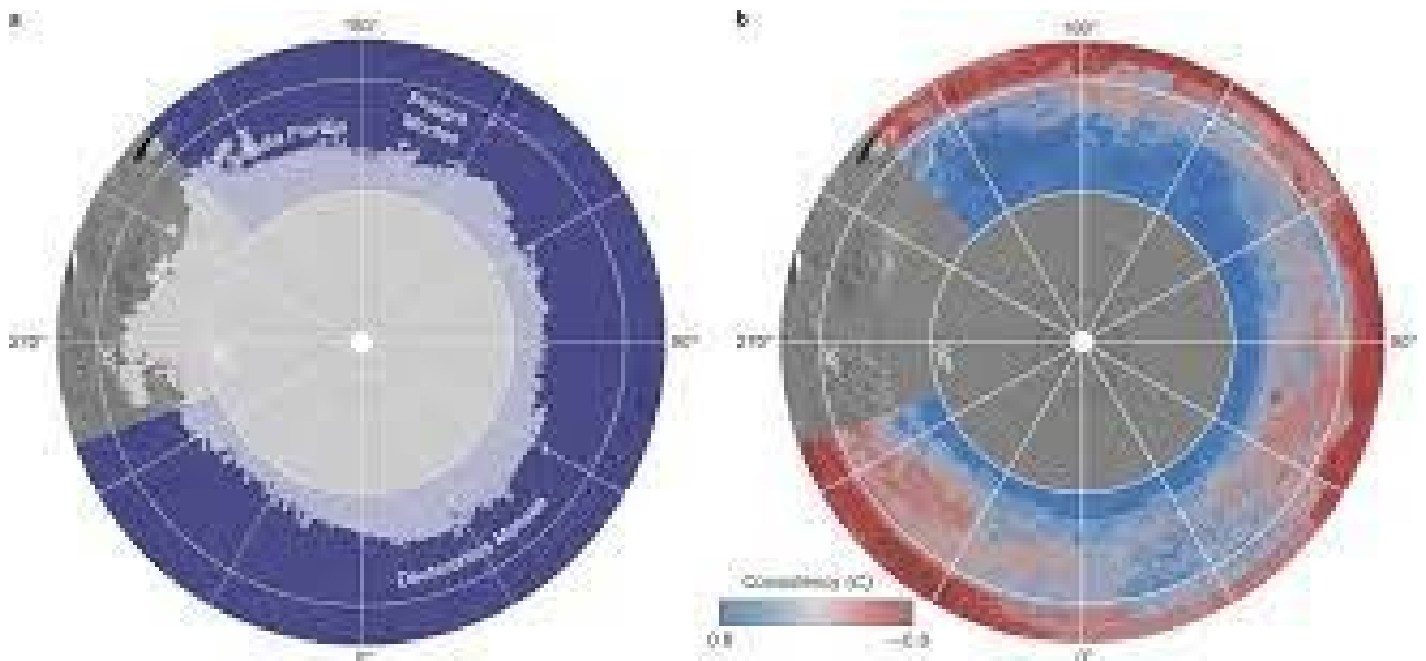


Subsurface Water Ice Mapping (SWIM) project

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About Subsurface Water Ice Mapping (SWIM) project

- It aims to locate the best places to access water ice buried under the Martian surface.
- The recently released fourth set of map is the most detailed and accurate ones since the project started in 2017.
- It is led by the Planetary Science Institute in Tucson, Arizona, and managed by NASA's Jet Propulsion Laboratory in Southern California.
- The project uses data from several NASA missions, such as the Mars Reconnaissance Orbiter (MRO), the 2001 Mars Odyssey, and the defunct Mars Global Surveyor.
- SWIM used two higher-resolution cameras on MRO.
- The Context Camera data was used to improve the maps of the Northern Hemisphere.
- For the first time, the HiRISE (High-Resolution Imaging Science Experiment) data was used to provide the most detailed view of the ice's edge as close to the equator as possible.
- The first phase of the SWIM project, completed in 2019, focused on the northern hemisphere. The second phase, completed in 2020 which include the southern hemisphere.
- Highlight of the new map
 - The new map includes sightings of so-called "polygon terrain," where the seasonal expansion and contraction of subsurface ice causes the ground to form polygonal cracks, indicating more ice hidden beneath the surface.

Q1) What is Mars Reconnaissance Orbiter?

The Mars Reconnaissance Orbiter (MRO) is a NASA spacecraft that has been in orbit around Mars since 2006. It is one of the most advanced and versatile spacecraft ever sent to the Red Planet, and its primary mission is to study Mars' atmosphere, climate, and geology.

Source: [Unlocking Mars' climate history: New map helps locate ice on Red Planet](#)

Source: <https://vajiramandravi.com/current-affairs/swim/>

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