ITS_LIVE

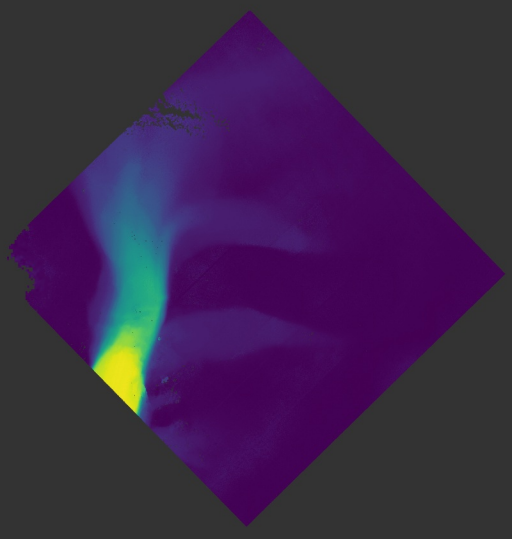
a NASA MEaSUREs project

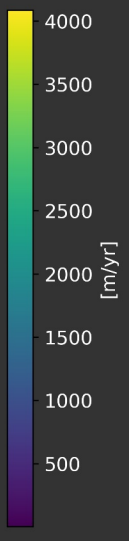
Jet Propulsion Laboratory
California Institute of Technology

Glaciers often serve as "canaries in the coalmine", responding to a warming environment well before other impacts of climate change become evident. By measuring how glaciers interact with Earth's system, scientists can form better predictions on sea level rise and potential impacts on ocean circulation, Earth's energy budget, agriculture, hydropower generation, and water security for large populations. Understanding how glaciers will evolve on a warmer planet requires closely monitoring dynamic change in near real time.

Using ITS_LIVE's regional mosaics we observe the surface velocity of the West Antarctic Ice Sheet that is vulnerable to ocean-melting induced collapse. Of particular concern is increased rates of ice discharge from the Pine Island and Thwaites Glaciers into the Amundsen Sea Embayment. Both the Pine Island and Thwaites Glaciers sit on retrograd beds (i.e. beds that deepen inland) and are susceptible to the runaway Marine Ice Sheet Instability.

Website: https://its-live.jpl.nasa.gov/





Velocity field generated with autoRIFT
from 2 Landsat 8 scenes 12 days appart.

Antarctica

Amundsen Sea Embayment

0 250 500 km