

## Image: Astronaut Mike Hopkins on Dec. 24 spacewalk

December 29 2013

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Credit: NASA

On Dec. 24, 2013, NASA astronaut Mike Hopkins, Expedition 38 Flight Engineer, participates in the second of two spacewalks, spread over a four-day period, which were designed to allow the crew to change out a degraded pump module on the exterior of the Earth-orbiting International Space Station.

He was joined on both spacewalks by NASA astronaut Rick Mastracchio, whose image shows up in Hopkins' helmet visor.

The pump module controls the flow of ammonia through cooling loops and radiators outside the [space station](#), and, combined with water-based cooling loops inside the station, removes excess heat into the vacuum of space.

Provided by NASA

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