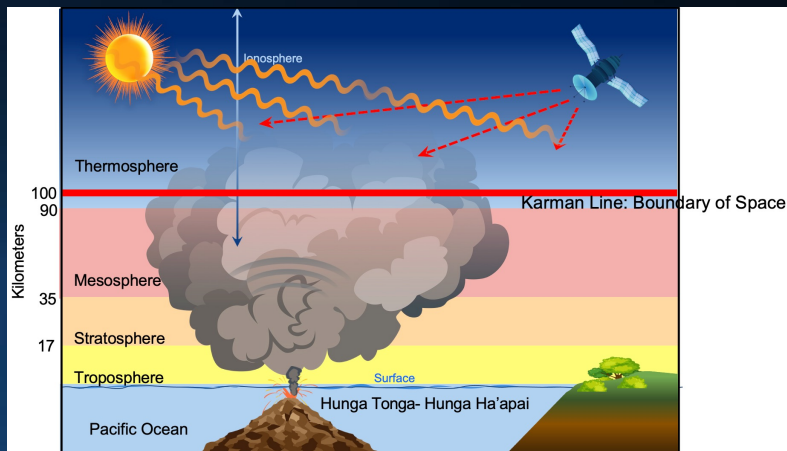
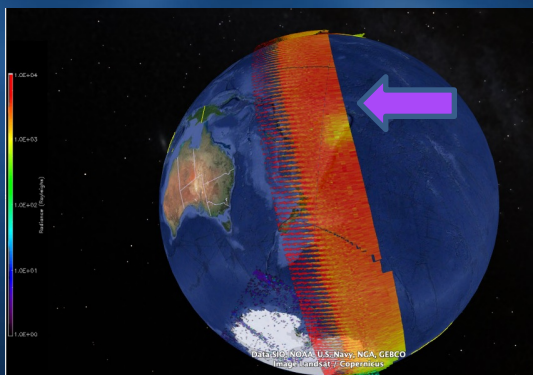


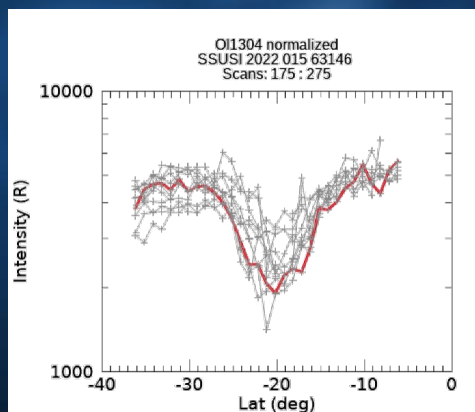
The First Observations of Direct Injection of Volcanic Eruption Material into Space



GUVI and SSUSI are hyperspectral imagers operating in the Far Ultraviolet – from 115 to 180 nm– that image space weather in the upper atmosphere.



Water vapor above 150km created a 'hole' in the emissions usually observed. This is the first direct observation of the direct injection of volcanic material into the upper atmosphere.



NASA GUVI and DMSP SSUSI observations of the 15 Jan 2022 Hunga Volcano eruption showed that as much as 200,000 metric tons of water was injected into near-Earth space.

- DMSP SSUSI and NASA GUVI have been providing global coverage of space weather through far ultraviolet imaging of the Earth. In Jan 2022, they observed the remarkable interaction of the Hunga Volcanic eruption with the atmosphere above the boundary to space at 100km.
- This water vapor injection created an ionospheric hole and produced waves that traveled across the globe in space.
- The inner solar system evidences enormous eruptions. Could these eruptions have played a role in the escape of light gases, such as hydrogen, especially for smaller bodies such as the Moon, Mars and Mercury?

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