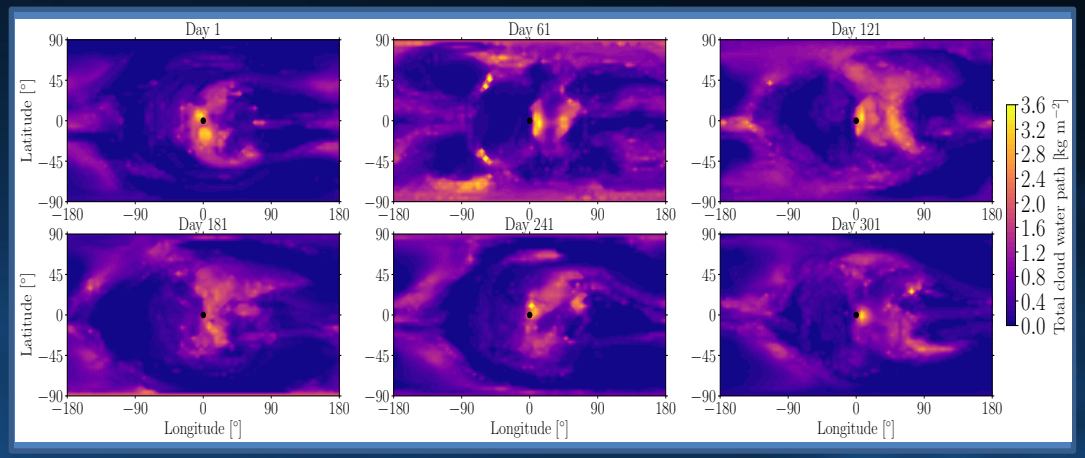
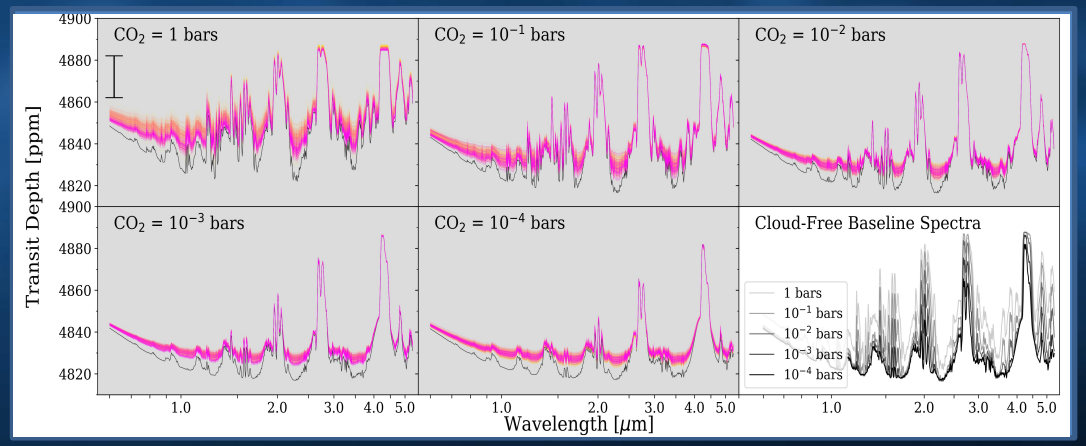
How's The Weather Out There?



Climate models of Trappist-1e



Simulated transmission observations of Trappist-1e

Tidally locked terrestrial exoplanets experience large scale cloud variability on their limbs, causing variations in their transit spectra on the order of 10 parts per million.

- 3D climate models of the tidally locked planet TRAPPIST-1e reveal a dynamic atmosphere with rapid formation and dissipation of clouds, particularly along the limb (+/- 90 degrees) which is probed with transmission spectroscopy observations
- The changing cloud cover affects simulated transmission observations up to 10 parts per million (10 ppm).
- While this effect is unlikely to be important for James Webb Space Telescope (JWST) observations, future space telescope missions may be able to detect it.

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