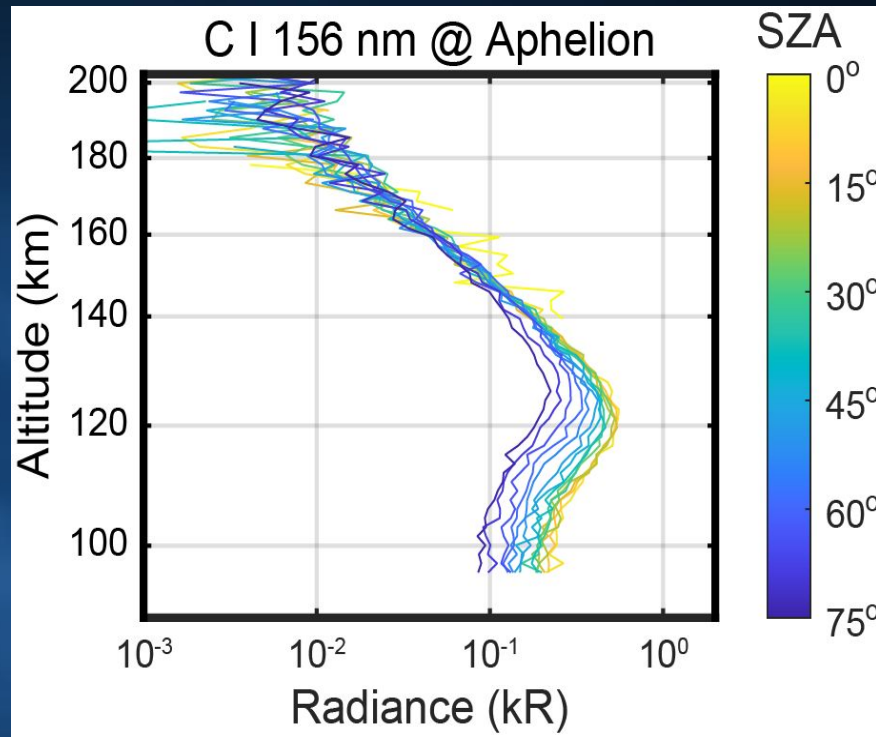


MAVEN Detects Atomic Carbon in Mars's Upper Atmosphere

The production of carbon (from CO₂) in the martian atmosphere is higher than previously thought, as is the escape of carbon from Mars.



Intensity of ultraviolet light from atomic carbon detected by the MAVEN IUVS instrument at different altitudes. Carbon was detected from day to night (colored traces), at different seasons, and at two different wavelengths.

- How often are carbon atoms produced in the martian atmosphere, and how often do they escape to space? Ultraviolet light coming from carbon atoms in the martian atmosphere has been observed for decades, but how the light is produced has been difficult to determine due to contamination by light coming from other species.
- MAVEN has measured ultraviolet radiation emitted by carbon in the martian upper atmosphere, revealing that there is more carbon (3.5x) in the upper atmosphere than previously thought.
- Subsequent modeling predicts that the radiation at high altitudes comes from sunlight scattered off carbon atoms in the upper atmosphere, and at low altitudes comes from carbon released from carbon dioxide (CO₂) molecules through collisions with electrons.