

Analyze Atmospheric Spectra

1. Use patterns from *Transmission Spectra Library* to help you identify which gasses are present in the atmospheric spectra for Earth, Mars, Venus, and one of Saturn's moons, Enceladus. Circle specific patterns on the atmospheric spectra and label them with the chemical formula of the reference gas that they match.

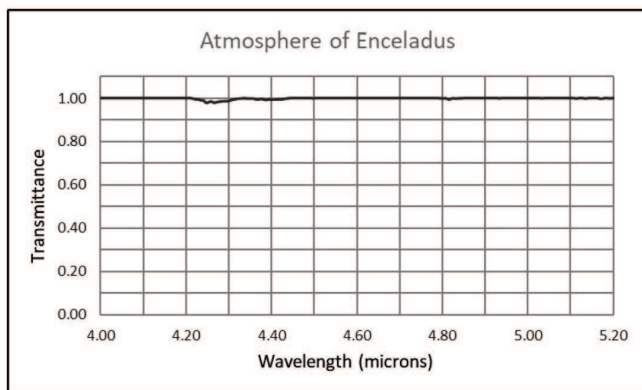
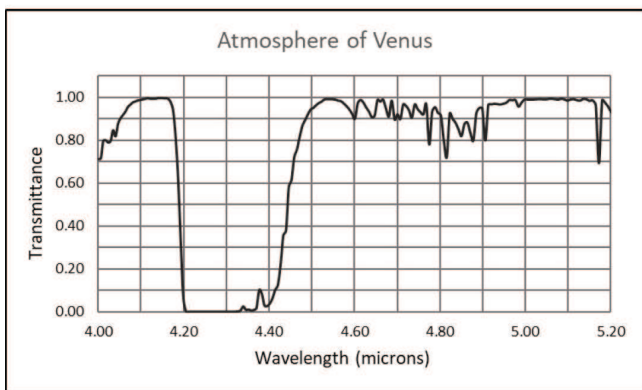
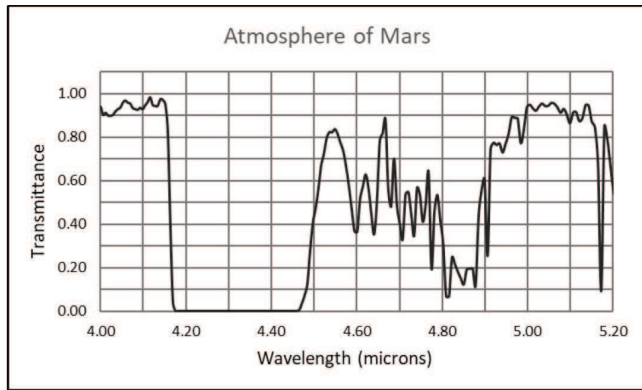
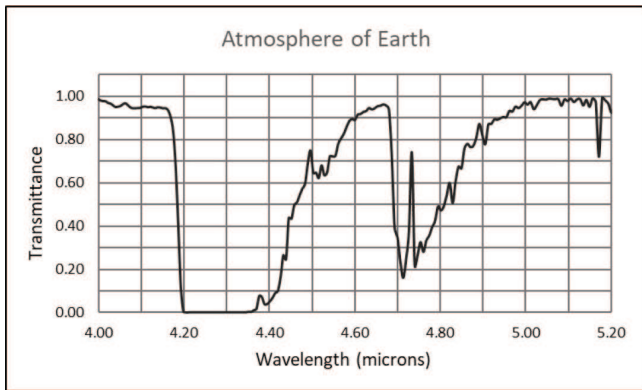


Image created using NASA Planetary Spectrum Generator (<https://psg.gsfc.nasa.gov/>)

2. Compare the patterns you circled and labeled on the atmospheric spectra to the appropriate reference spectra. Use the table to track your thinking.

- Add a ✓ if the patterns you circled are evidence that **supports** the presence of the reference gas in an object's atmosphere.
- Add a X if the patterns you circled are evidence that **does not support** the presence of the reference gas in an object's atmosphere.
- Add a ? if the patterns you circled are evidence that **might support** the presence of the reference gas in an object's atmosphere.

Object	Reference Gasses							
	H ₂ O Water	CO ₂ Carbon dioxide	O ₃ Ozone	CO Carbon monoxide	NH ₃ Ammonia	N ₂ O Nitrous oxide	CH ₄ Methane	SO ₂ Sulfur dioxide
Earth								
Mars								
Venus								

Enceladus								
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