Astronomy C10: Week 3

(Peter) Xiangyuan Ma | Sections : 104/105/101

Weekly Reminders

Reminders!

HW 4 due at 6pm on Friday 9/26 via Gradescope

TALC 5-7pm on Wednesday and Thursday in Campbell 131 and on Zoom

My **office hours** 9am-10am on Thursday and 4-5pm on Monday in Campbell 355

Check bCourses for additional GSI office hours

We will be writing the quiz **today (in a few mins)!**

This weeks plan!

Last Minute Quiz review [~15 mins]

Quiz! [5 + 20 mins]

Scattering of Light [~5-10 mins]

Questions? [Remaining time]

Any Questions before the quiz?

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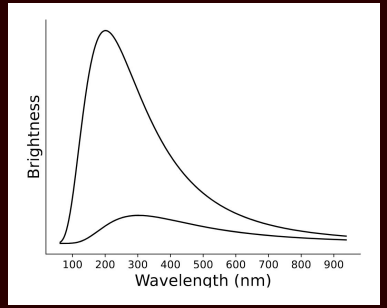

$$\lambda_{\text{peak}} T = 2.9 \cdot 10^6 \text{ nm K}$$

$$T_{\text{cooler}} = \frac{2.9 \cdot 10^6 \text{ nm K}}{300 \text{ nm}} = 9667 \text{ K}$$

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Practice Problem 2

An astronomer observes a star with a surface temperature of T=5000K.

a) *Calculate the star's peak wavelength in nanometers.*

b) *If the telescope used has a primary mirror diameter D=2m, what is the diffraction-limited angular resolution (in radians) at the star's peak wavelength?*

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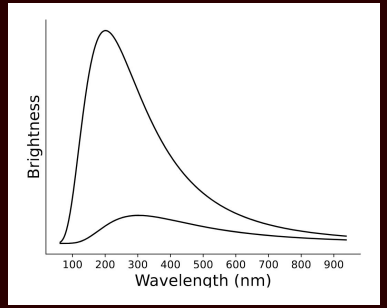

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Quiz Time!

Quiz Instructions

Write your **Name** and **Student Number (SID)** on the front page (or else we can't grade it..)

Do **NOT** flip page until I say **"go".**

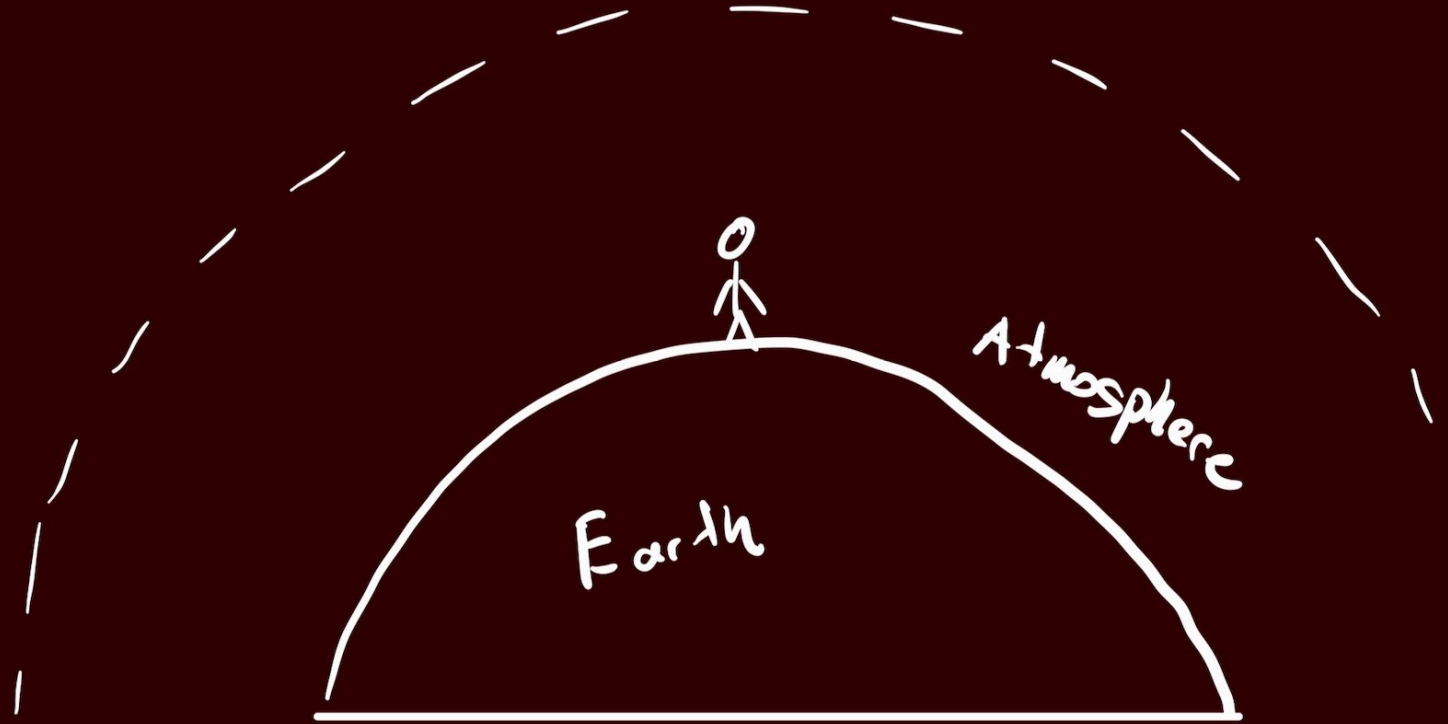
DSP Accommodations please follow the other GSI

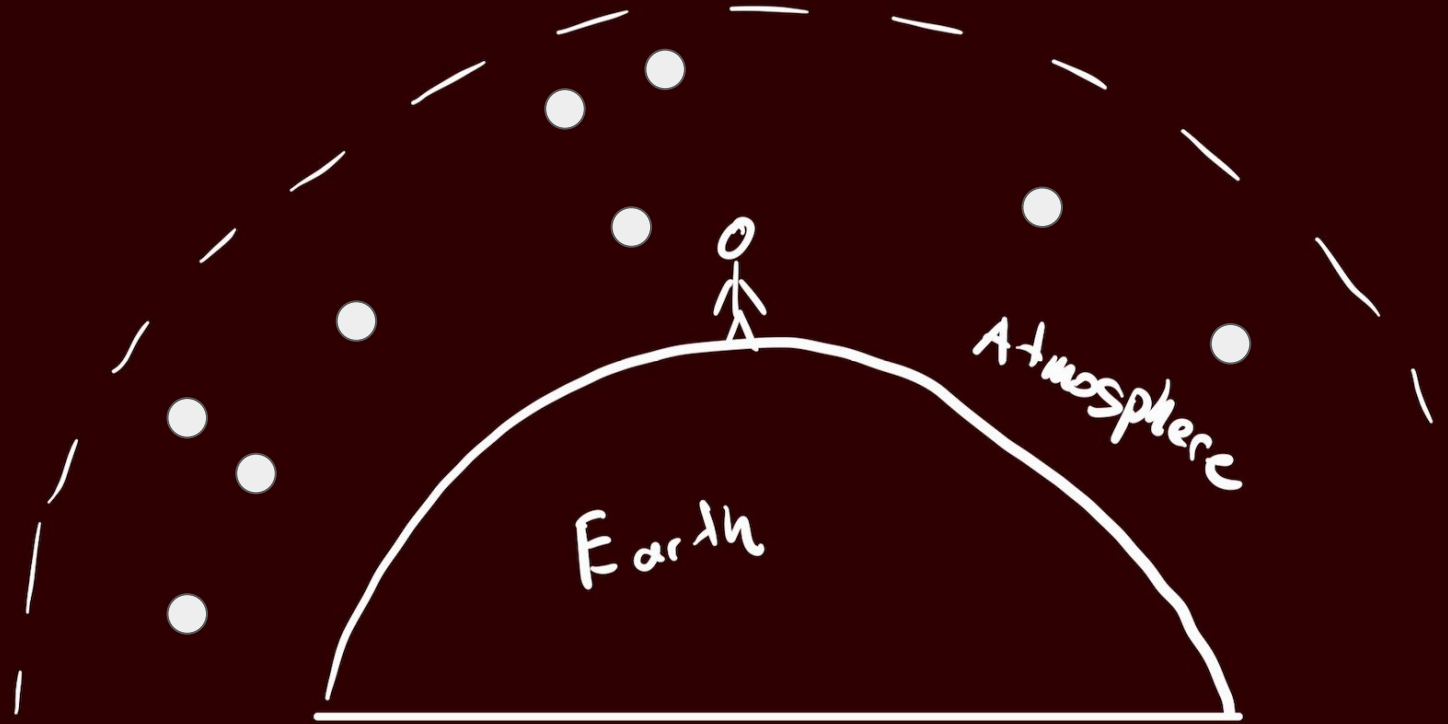
CLOSED BOOK and **No Calculators**

Good luck!!

Hand me the quiz upfront when done!

Scattering of light [10 mins + Demo]


Atmosphere
Earth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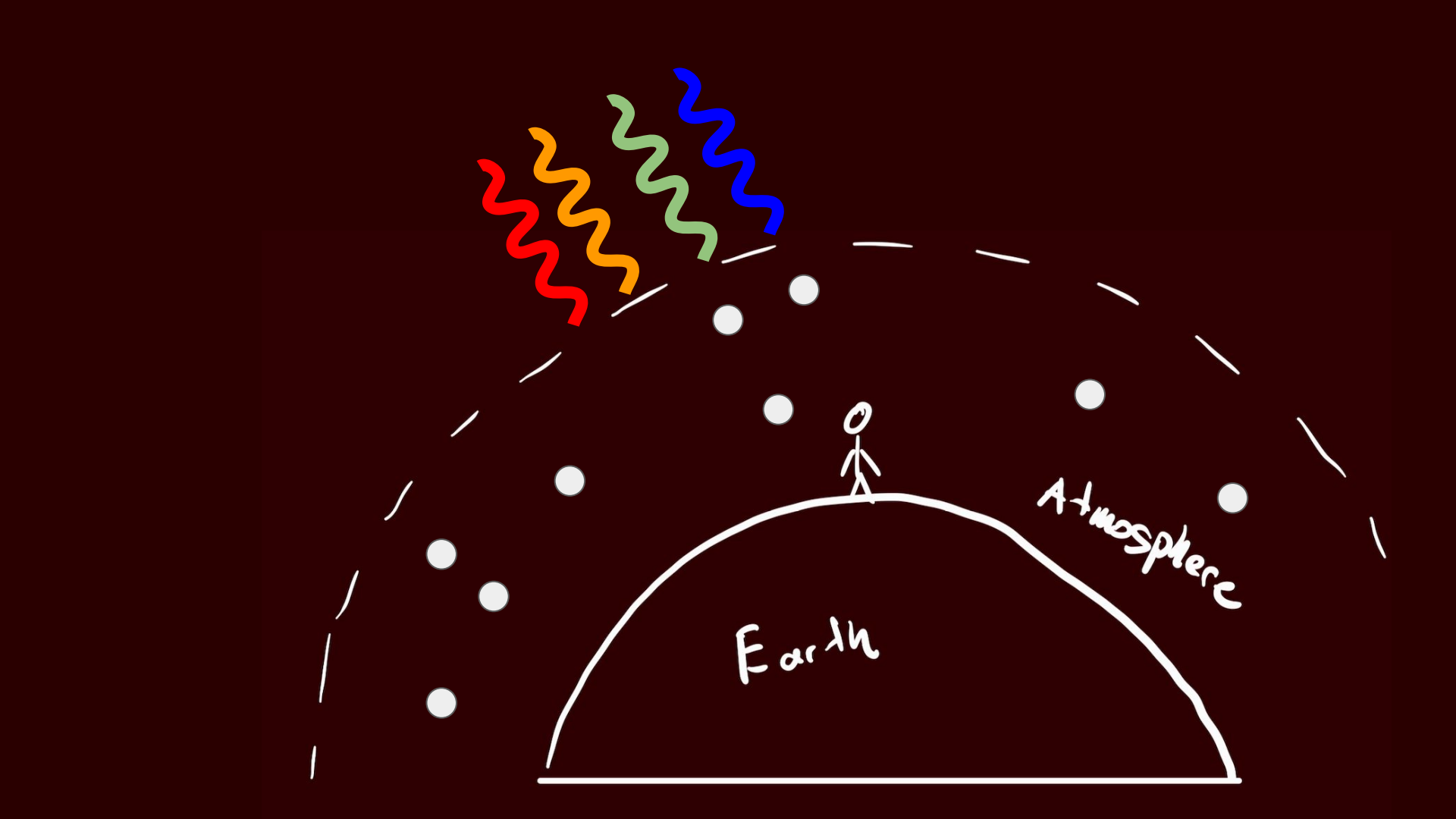
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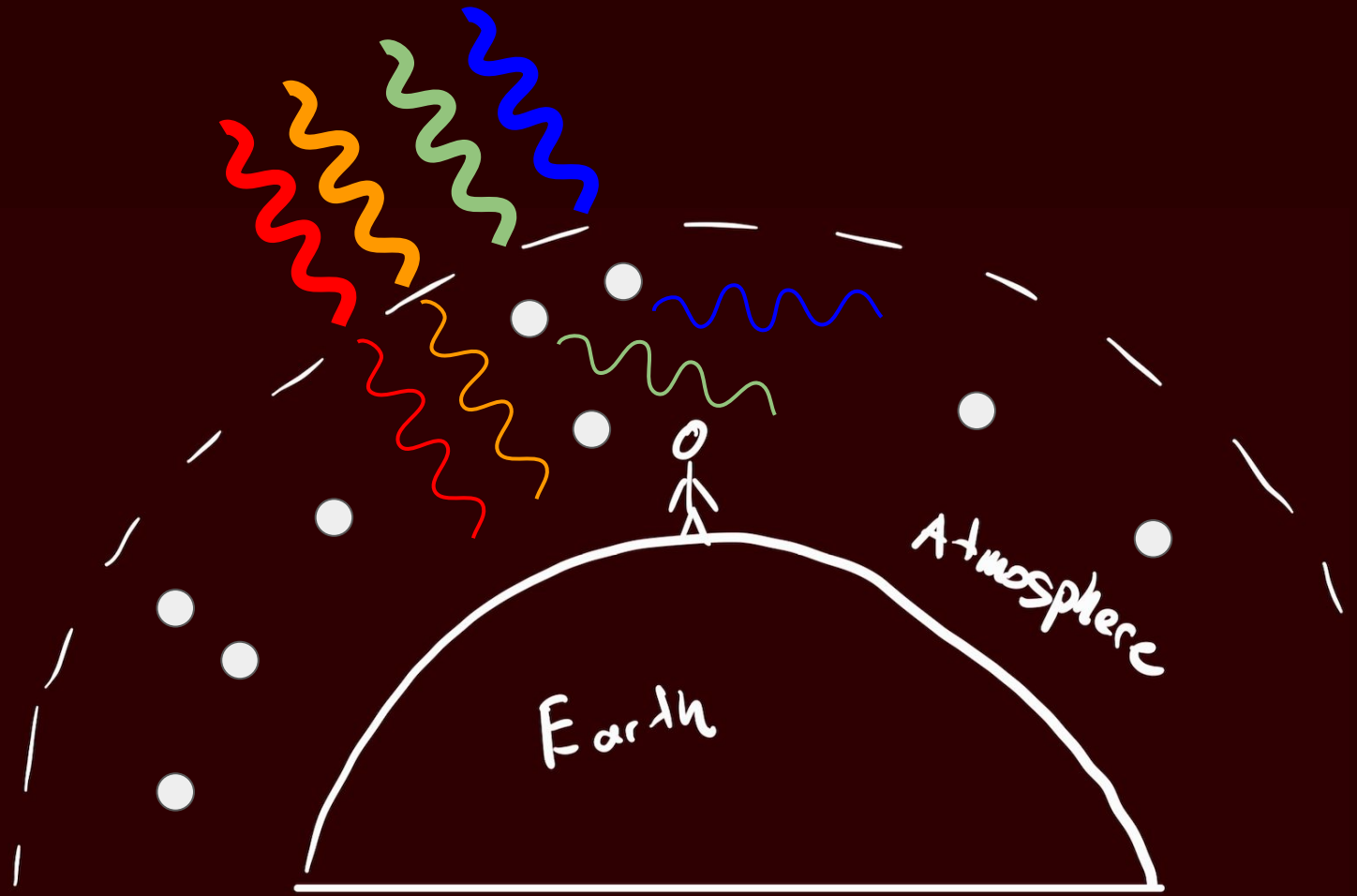
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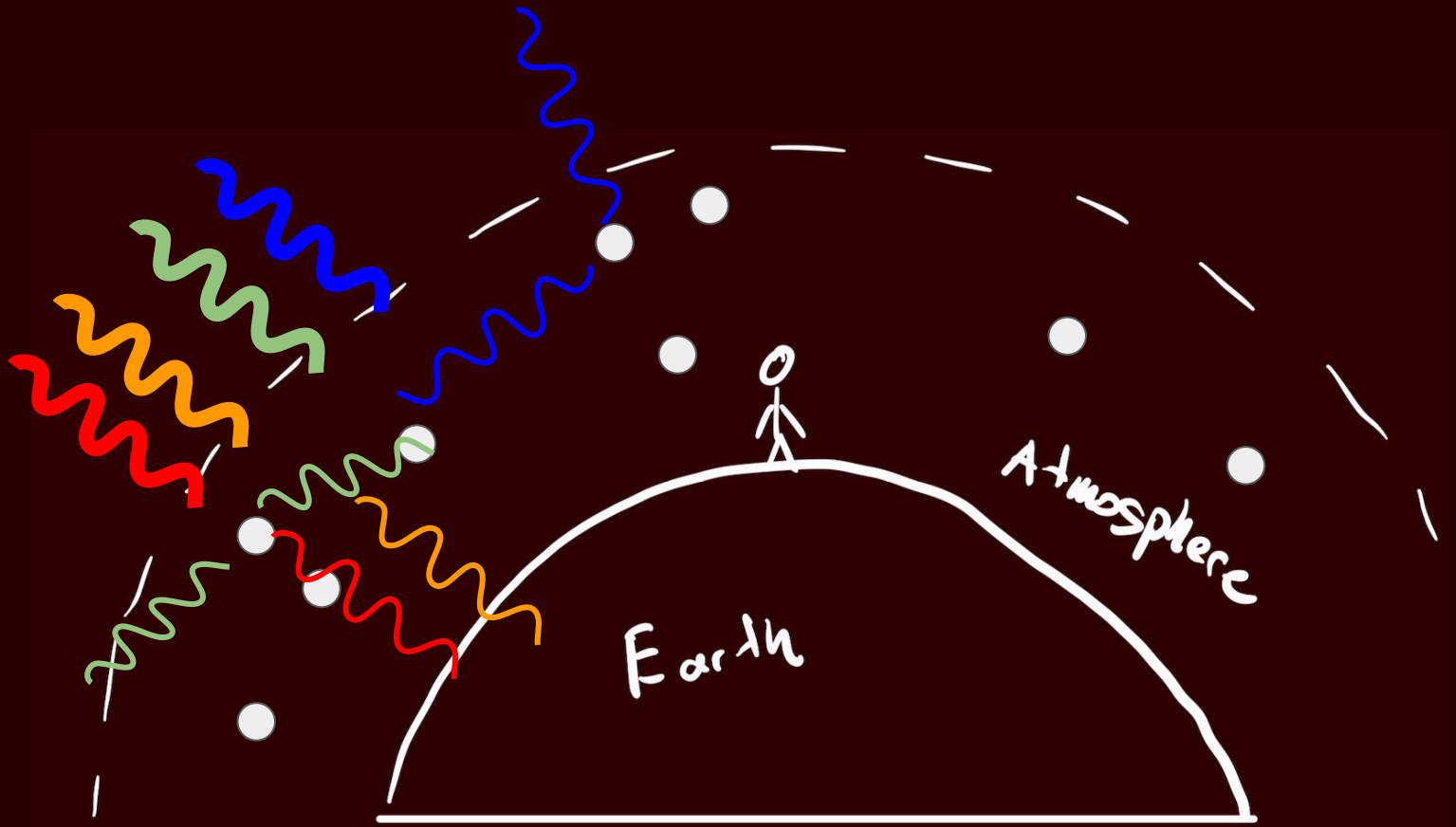
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Scattering

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- Sun appears slightly redder because red wavelengths are scattered less
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- Sun appears slightly redder because red wavelengths are scattered less
- Sunsets are especially red because light must travel through more of the atmosphere (Rayleigh scattering)

👉 So, Rayleigh scattering is just light bouncing off tiny molecules (different then absorbed or emission), with blue light bouncing around the most.

Demo! [5 mins]

Green Flash!

Questions?

Attendance checkout:

See ya next time!