



# Why the Sky Is Blue

Sunlight, tiny air molecules and a trick of the eye

# What's happening up there

1

## **Sunlight holds every color**

White light is a mix of red through violet

2

## **Air molecules are tiny**

Much smaller than the waves of light

3

## **Short waves bounce more**

Blue light scatters several times more than red

4

## **Blue comes from every direction**

So the whole sky glows blue

## **The name for it**

Rayleigh scattering, after the British physicist Lord Rayleigh, who worked it out in the 1870s.

# Why not violet?



## **The sun sends less violet**

Sunlight is weaker at the violet end



## **Our eyes favor blue**

We're far less sensitive to violet



## **Some violet is absorbed**

High in the atmosphere



## **The mix looks sky blue**

Our brain blends what's left

# Sunsets and other skies

## Red sunsets on Earth

- Low sun shines through much more air
- Most blue is scattered away on the trip
- Reds and oranges are what's left
- Dust and smoke make them brighter

## Upside-down skies on Mars

- Fine red dust fills the thin air
- Daytime sky looks butterscotch
- Sunsets on Mars look blue
- Dust scatters differently than air

# Remember

Blue sky is sunlight bouncing off the air itself.