

The Dark Night Sky

- The Universe : Now, Then, and Later

The darkness of night tells a finite story.

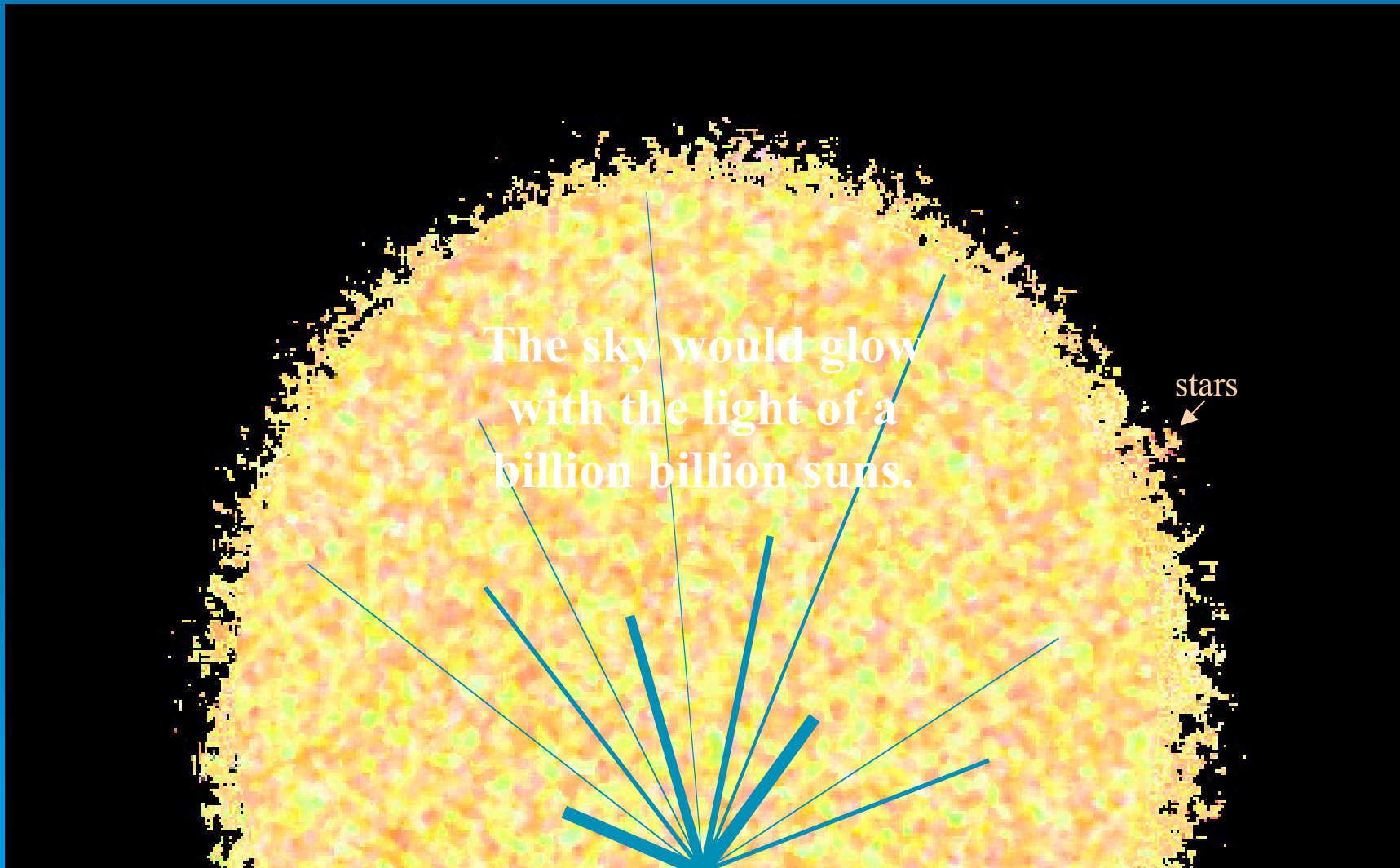


- When we look at the sky, we see bright stars against the darkness of space.

- Even if we look at the sky with the Hubble Space Telescope we will still find patches of light against darkness.



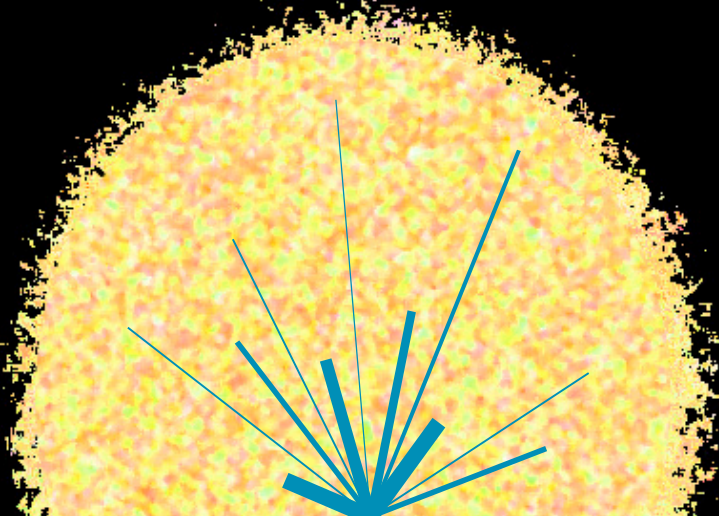
- If the Universe were infinite in age and extent, we would see a star in every direction.



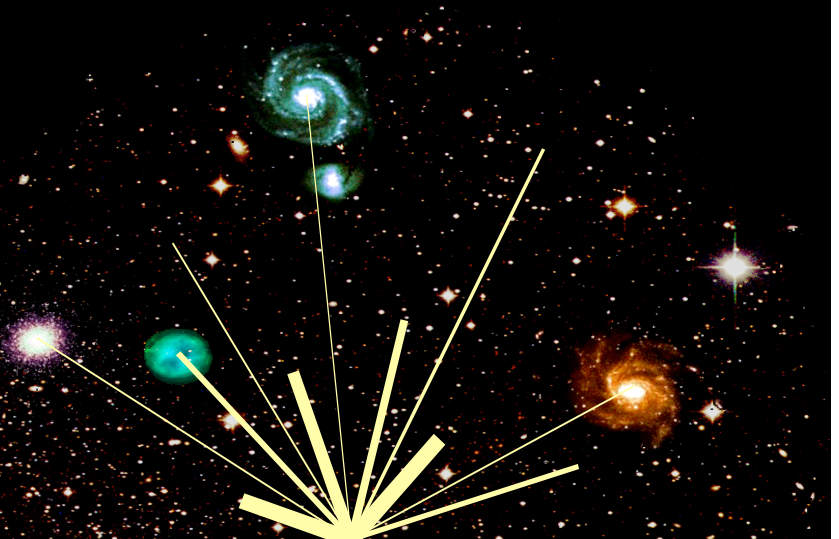
Olber's Paradox

- In 1826, astronomer Heinrich Wilhelm Olber became the first to make the consequences of a dark sky popularly understood. In his time it was not clear what was happening, so the word “paradox” was applied.

Stationary Universe

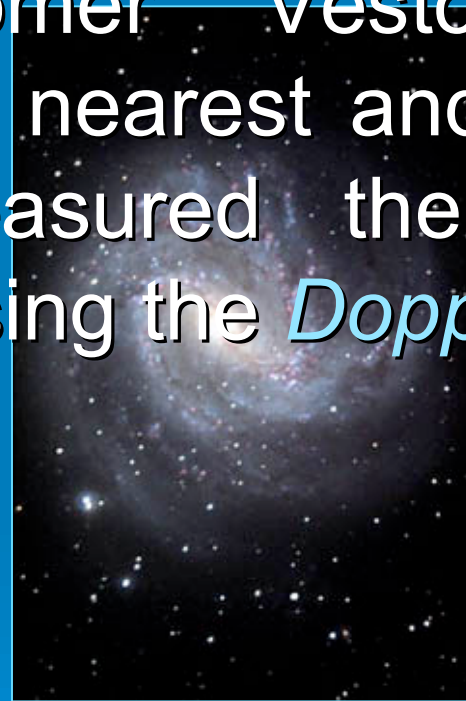


Our Universe



The Receding Universe

- In 1917 astronomer Vesto Slipher observed 25 of the nearest and brightest galaxies, and measured the galaxies relative velocities using the *Doppler Effect*.



The Receding Universe

- Much to his surprise, Slipher discovered that 21 of the galaxies had their light shifted to the red, implying that they are moving away from us.

