The James Webb Space Telescope
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Reflecting Telescopes
- No chromatic aberrations
- Can be big
- Cheaper for same size
- Easier to make

Why do we care about large Telescopes?
The size of the telescope’s light gathering area dictates how much light it can gather.

\[
\text{LightGatheringPower} = (\pi \times D^2)/4
\]

The further an object, the fainter its light.

\[
\text{Intensity} = \frac{1}{d^2}
\]

So, the more light a telescope can gather, the further it can see into space.

JWST Will See Further than Ever
- 6.5m mirror
- 2021 Launch
- 5-10 years mission duration
- Under 50K (-370°F) operating temperature
- 0.6 - 28.5 micron wavelength coverage

Interstellar dust clouds are often opaque to visible light. JWST will be able to peek through the birthplace of stars!

Recap: why JWST can see better
Larger mirror: can gather more light, can see fainter objects.

In space: no atmosphere to hamper observations programs to create your own poster.

Observes in the infrared: can see through objects optically opaque in visible spectrum.

Observes in the infrared: far objects tend to be in IR range

Acknowledgments

NASA. Retrieved September 15, 2018, from https://www.jwst.nasa.gov/


Image References:
Image #1: astronomynotes.com
Image #2: nasa.gov
Image #3: astronomy.swin.edu.au
Image #4: nasa.gov
Image #5: nasa.gov