Object: The Sun

Distance from Earth:
8.3 light-minutes (149 million km/93 million miles)

Size:
1.4 million km (865,000 miles) across

Telescope:
Solar Dynamics Observatory, Atmospheric Imaging Assembly (SDO/AIA)

Light:
Ultraviolet (30.4 nm)

Description:
Our Sun is 4.6 billion years old and only one of 100 billion stars in our galaxy. Without it, life on Earth would not be possible. What we know about our Sun serves as the foundation for what we understand about distant stars.

Over its lifespan, the Sun will convert only one-tenth of one percent (0.1%) of its mass into energy. Based on observations of other stars, astronomers estimate that half of the remaining mass will blow off into space after our Sun becomes a red giant about 5 billion years from now. The mass that is left will shrink, becoming a very dense dwarf star that will glow dimly for billions more years.

Credit: NASA/SDO-AIA Team, Lockheed Martin/SAO

YOU ARE HERE...AND NOW

But the distant past is all around you.

Our Sun and Earth formed about 4.6 billion years ago from the cosmic gas and dust of ancient, long-gone stars.