## The NASA Atmosphere Observing System (AOS)

### EARTH SYSTEM

AOS provides an observing system for measurements of 3 atmospheric phenomena; aerosols, clouds, and precipitation; that are critical to better understanding and predicting weather, air quality, and climate

# AOS Includes several "First-Ever" observations:

- Vertical motions within storms and clouds
- Simultaneous climate-relevant phenomenon and their linkages to each other (clouds, precipitation, radiation, and aerosols)
- Changes in aerosols, clouds, and precipitation over time, from minutes to years



https://aos.gsfc.nasa.gov

## Why Should NASA Make These Measurements?

Global Risks Report 2024

Top 10 risks

WORLD ECONOMIC FORUM

"Please estimate the likely impact (severity) of the following risks over a 2-year and 10-year period."

#### 2 years Misinformation and disinformation Extreme weather events 2nd Cyber insecurity 4th 5th 6<sup>th</sup> 7th nflation 8th gt 10<sup>th</sup> Risk categories Economic Environmental

10 years

1 <sup>st</sup>	Extreme weather events
2 <sup>nd</sup>	Critical change to Earth systems
3rd	Biodiversity loss and ecosystem collapse
4 <sup>th</sup>	Natural resource shortages
5 <sup>th</sup>	Misinformation and disinformation
6 <sup>th</sup>	Adverse outcomes of AI technologies
7 <sup>th</sup>	Involuntary migration
8 <sup>th</sup>	Cyber insecurity
9 <sup>th</sup>	Societal polarization
10 <sup>th</sup>	Pollution
Geopolitical Societal Technolog	

Source: World Economic Forum Global Risks Perception Survey 2023-2024.

https://www.weforum.org/agenda/2024/01/global-risk-report-2024risks-are-growing-but-theres-hope/





**Billion-dollar** disasters increased ~7 fold from early 1980s to early 2020s, mostly from severe storms.