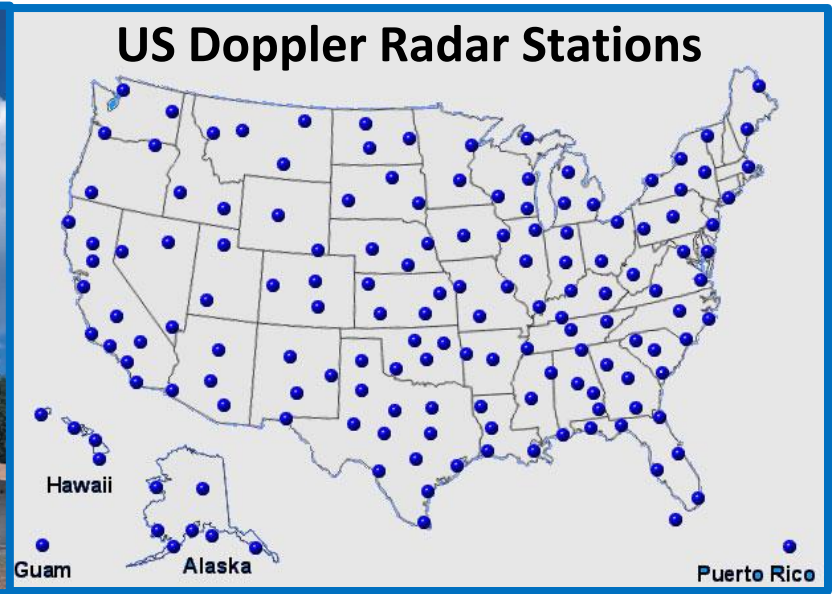




Instruments collecting evidence

Weather Radar

helps
spot evidence
of rotation
(*possible
tornadoes!*)
in storms



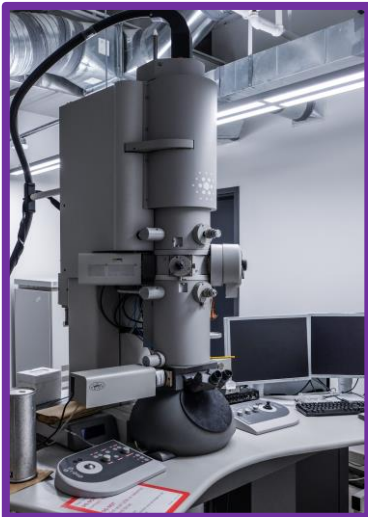
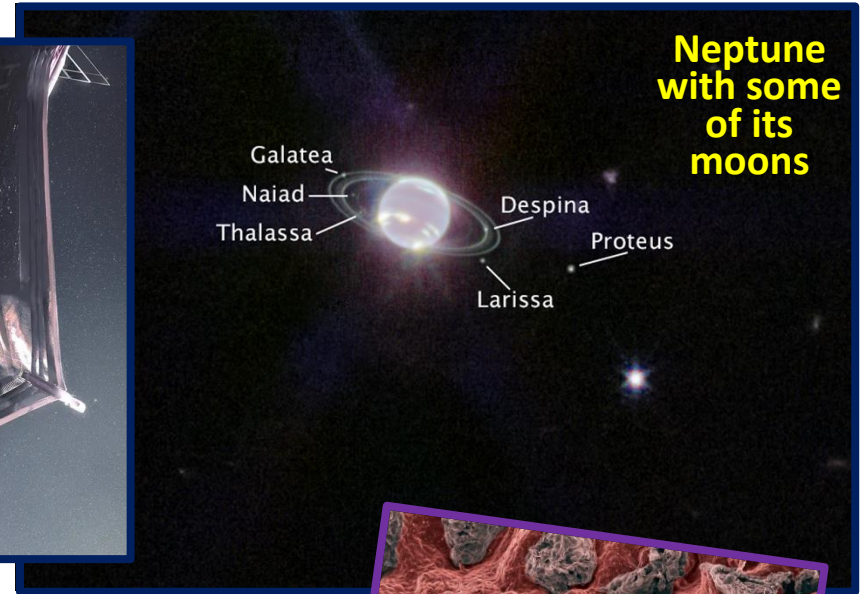
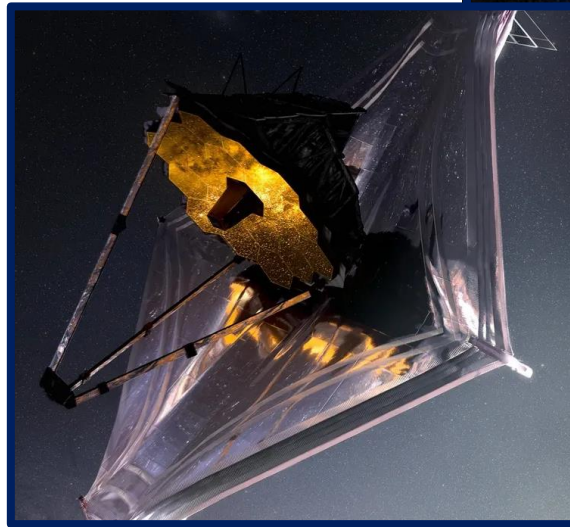
Seismometer, Seismograph

helps detect,
measure, and
locate
earthquakes

Instruments collecting evidence

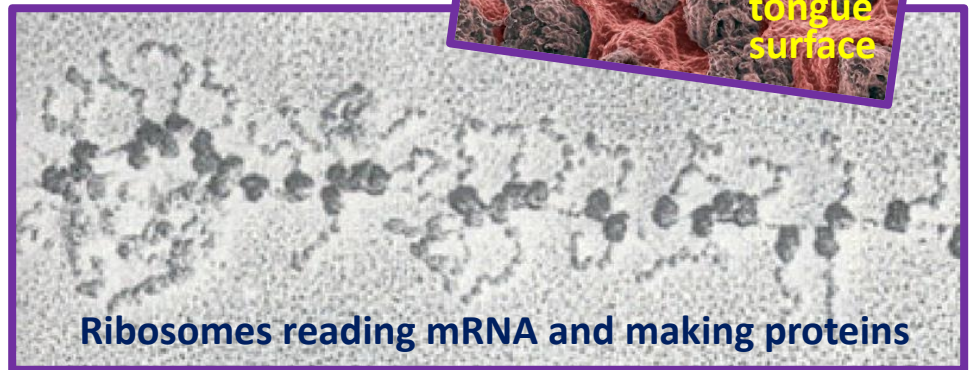
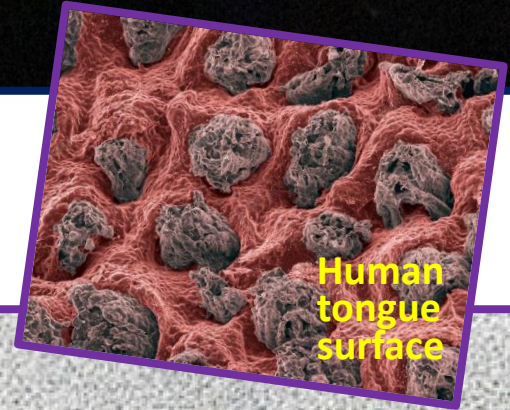
James Webb Telescope

helps
observe VERY
FAR AWAY
objects



Electron Microscope

helps
observe
VERY SMALL
objects



Describe the Elephant



*Observation
should NOT
include
opinion!*

It weighs 480 kilograms.

It has large ears and long trunk.

It has gray wrinkly skin.

~~**It is very cute!**~~

It is young.

It is about 1.5 yards tall.

Qualitative vs Quantitative Data

Qualitative (letters)

- **Descriptions** using **words**.
- Data which can be **observed** but **not measured**.
- What the object is *like*: texture, smell, taste, appearance, etc.

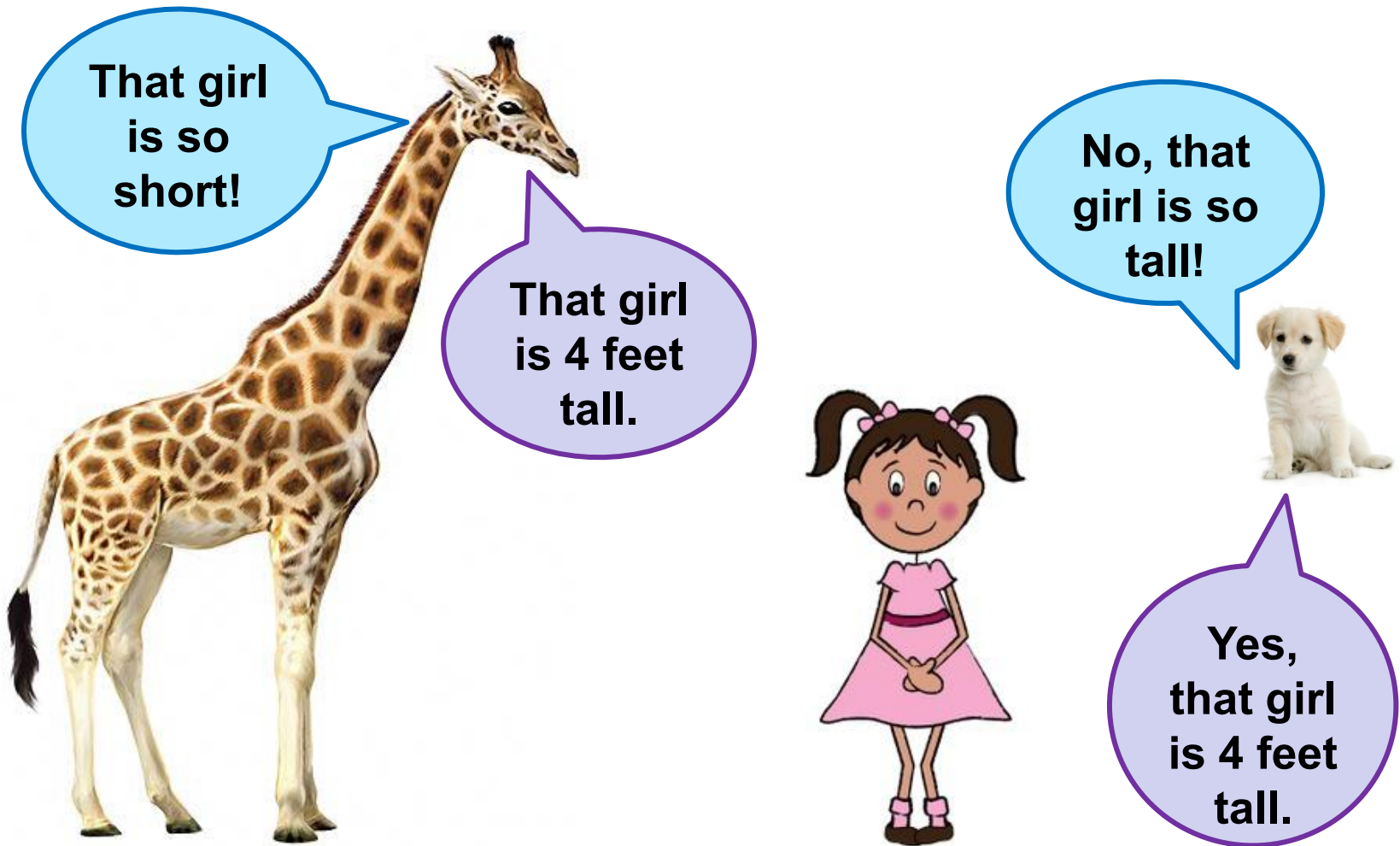
Subjective, relative

Quantitative (numbers)

- Specific **numbers**.
- Data which can be **measured**.
- Length, height, area, volume, weight, speed, time, temperature, humidity, sound levels, cost, age, etc.

Objective, specific

Qualitative observations are **subjective**



Quantitative observations are **objective**

Observation depends on observer

- Location and size of an observer
- Observer limitations



can only see
visible light



can see
ultraviolet light

