

ASTRONOMY-TO-GO

The John J. McCarthy Observatory

LESSON: Weather on Other Worlds **(10)**

CURRICULUM:

GUEST INSTRUCTOR: Amy Ziffer or other JJMO volunteer

TIME: About 40 minutes

LOCATION: SNIS Planetarium (best) or any darkened classroom with projector and screen or whiteboard for projection of PowerPoint show

TEACHING AIDS: PowerPoint show “Weather on Other Worlds” (shortened version)

DESCRIPTION: Multimedia show with narration

Weather is an everyday phenomenon on Earth, but many people have never stopped to consider that weather also occurs elsewhere. In fact, some kind of weather probably occurs on any body with a detectable atmosphere. In our solar system, that includes Earth, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, several moons circling the gas giants, and in all likelihood Pluto.

We start with a quick definition of what weather is and note that weather on other worlds is both similar to and different from that on Earth. The similarities lie primarily in the types of weather phenomena (wind, temperature, humidity, precipitation, etc.) and differ primarily in degree and specifics (weather on other worlds tends to be more extreme; precipitation may occur elsewhere, but in most cases it is not water precipitation).

The bulk of the PowerPoint show consists of a series of weather forecasts, given in the same format as one might give a forecast for Earth weather, for “mystery” bodies in the solar system. Students are asked to reason from the information in each forecast to identify the planet or moon in question. Each forecast is followed by an examination of why that planet or moon’s weather is what it is. The final segment in the show is a brief look at how weather on Earth will change dramatically over the next few billion years in response to changes in the Sun.

ASSESSMENT:

AVZ, 3/4/07
PEM Revised 4/2014