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Video Report: "Predicting Weather"

url: http://www.youtube.com/watch?v=dqpFU5SRPgY&feature=related

This video discusses weather prediction, cloud types and their processes, and the sources of information meteorologists use to make weather forecasts. Many people want to know what the weather is going to be like, so it is important to make accurate forecasts. Satellites launched by the National Aeronautic and Space Administration (NASA) collect data regarding cloud formation, evolution, and movement. New satellites may improve the accuracy of these weather forecasts by collecting new forms of information.

Weather forecasting is not perfect, so meteorologists are always looking for new ways to collect data that will help with their forecasts. Clouds can provide details about what weather is observed, but earlier satellites only collected data on the upper surface of the clouds. Future satellites will have the ability to view the physical properties within clouds, generating a 3-D view of the physical processes that occur in clouds. These data may help us understand these processes better so that weather forecasts may become more accurate.

We will want to provide an independent test of the data collected by these new satellites. One new satellite is called cloudSAT and will provide a vertical cross-sectional view of clouds, giving us information about cloud layer thickness, cloud top and base altitude, and cloud water and

ice content. Two strategies will be used to test the satellite data: weather balloon (sonde) and weather airplane observations. Weather balloons will be released along transects parallel to the track of the satellite overhead. Temperature and pressure data from the weather balloons will be compared with the satellite data in order to test this new satellite data. Airplanes with meteorological equipment will fly through clouds that are measured by the satellite. The data collected directly by the equipment on the plane will be compared with the satellite data to test the accuracy of the satellite data. Data collected on the plane will include moisture content (including the phase of the moisture, liquid or vapor), altitude, temperature, and pressure. If the independent tests of the satellite data are successful, then we will have more confidence in the new satellite data.

Weather forecasting is imperfect and meteorologists want to improve their ability to accurately predict the weather. New satellite data can do this so we will test these satellite data with weather balloon and weather airplane meteorological data. If these tests are successful, then the satellite data will be incorporated in future weather forecasts.