# What goes up ...

Forget birthday parties, some balloons are destined for something greater. Scientists have launched weather balloons to monitor air conditions for more than a century. In the 1930s, the National Weather Service began attaching radiosondes (battery-powered instruments) to the balloons to keep tabs on the atmosphere. At dozens of sites nationwide, balloons are simultaneously launched twice daily. Here, a look at a launch at the National Weather Service's Baltimore-Washington Weather Forecast Office in Sterling. — *Kris Coronado*

## BALLOON

A **balloon** is inflated with helium 30 minutes to an hour before it launches at 7 a.m. and 7 p.m. When full, the balloon is about five feet tall, says Christopher Strong, a warning coordination meteorologist. It can reach 100,000 feet into the stratosphere and stretch to 35 feet across during flight, because of the change in pressure.


## RADIOSONDE

Attached to the balloon at the end of 100 feet of string and housed in plastic foam ("so it's nice and light," Strong says) is a **radiosonde** that records weather data during the balloon's ascent.

**A sensor,** pictured above, in the radiosonde measures humidity. A global-positioning system device, added a few years ago, tracks winds by calculating how much wind it would take to blow the balloon between any two points in its flight.

## SENSOR

**A metal wire temperature sensor** attached to the radiosonde "uses electrical resistance to figure out how warm and cold it is," Strong says. Another sensor in the radiosonde measures barometric pressure, and a radio beacon continuously transmits data.

**A parachute deploys** as a balloon descends to Earth at 300 feet per minute. On tranquil days, a balloon might land near the station; on windy days it can reach the Delmarva Peninsula — and, once or twice, the White House lawn, Strong says.

✱ **SMART TIP** Radiosondes come with a baggie, so if someone finds one, he or she can return it to the National Weather Service.

PHOTOS OF METEOROLOGIST CARRIE SUFFERN AND EQUIPMENT: BENJAMIN C. TANKERSLEY