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The Sun returns... finally; South Pole, September 23, 2007

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Global Monitoring Division - ESRL-GMD

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NOAA/ESRL South Pole Baseline Atmospheric Research Observatory personnel, Johan Booth and Emrys Hall, who are wintering over at the U.S. Amundsen-Scott South Pole Station, finally saw the sun return to the polar plateau after 6 months of darkness. The equinox time, also known as the sun rise time at the South Pole, was 05:51 EST (09:51 GMT) on September 23, 2007. Assuming basic atmospheric refraction, the sun could have been seen as much as two days earlier. However overcast skies prevented any early glimpses of the sun. The sun is now above the horizon at South Pole and will continually stay above the horizon until March 22, 2008 when it will set once again for 6 months. Air temperatures as low as -75C (-100 F) are typical into September, as the coldest temperatures of the year are often recorded just before the sun's return. The geographic South Pole is located at 2850 meters (9,350 ft.) above sea level on solid ice approximately two miles thick. NOAA/ESRL staff members each spend a full twelve months stationed at the South Pole observatory and sunrise signals that the end of their tour is near. Only a few short weeks until the station opens for the austral summer season and two new NOAA/ESRL staff members arrive Pole to relieve the current crew. To view the South Pole sunrise, go the live NOAA/ESRL web camera at <http://www.esrl.noaa.gov/gmd/obop/spo/livecamera.html>.

Background: NOAA/ESRL and its predecessor organizations have conducted a range of baseline atmospheric measurements at the South Pole since 1957. The longest atmospheric carbon dioxide record on earth (started in 1957) has been obtained from the South Pole and pre-dates the better known Mauna Loa carbon dioxide record by a year. This year's sunrise at the South Pole marks the 20th anniversary of the Montreal Protocol, the response to the 1986 discovery of the ozone hole, banning ozone destroying CFCs. The weekly NOAA ozonesonde data record dates back to 1986 (over 20 years) as a continuous record. In addition, earlier data from occasional balloon flights in the 1970's predate the appearance of the ozone hole in the early 1980s. Over the past year the winter crew has released over 60 ozonesondes carried aloft on high altitude balloons (up to ~110,000 feet) to study the stratospheric ozone layer and to document the onset and severity of the annual Antarctic "Ozone Hole" (http://www.esrl.noaa.gov/gmd/dv/spo_oz/sondes/ozsondes2007.html).

Significance: Continuous, long term records of a range of atmospheric properties measured at the South Pole, where the mantra is "the cleanest air on earth", have documented changes in the composition, chemistry, and radiative balance of the atmosphere over the Antarctic continent since the inception of the measurements. Many of these changes are related to mankind's combustion of fossil fuels and release of industrial and household chemicals into the atmosphere.

More information:

<http://www.esrl.noaa.gov/gmd/obop/spo/livecamera.html>

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