

# ***Live from IPY!*** with *Elke Bergholz*

Live from the “South Pole Ozone Changes” Expedition

**South Pole Station, Antarctica**

12 December 2007





Raise your hand to ask a question

List of all participants

Return to the Lobby or Exit

Slides will be shown here

'Chat' with one person or the entire group



*Today's event will be recorded and archived at [www.polartrec.com](http://www.polartrec.com).*



## ***What is PolarTREC?***

PolarTREC is a professional development experience in which K-12 teachers are paired with researchers in authentic polar research experiences.

In the next three years over 40 teachers from around the United States will join scientists in the Arctic and Antarctica in celebration of the International Polar Year!

***[www.polartrec.com](http://www.polartrec.com)***



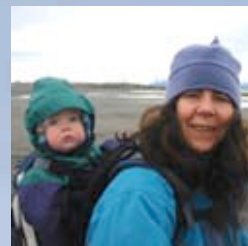
# The PolarTREC Team



**Wendy Warnick**  
PolarTREC PI  
Executive Director



**Helen Wiggins**  
Program Coordinator



**Janet Warburton**  
PolarTREC  
Project Manager



**Katie Breen**  
PolarTREC  
Project Manager



**Kristin Fischer**  
PolarTREC  
Project Manager



**Ronnie Owens**  
Web Developer



**Ben Wade**  
Web Developer



**Tina Buxbaum**  
Electronic Media  
Project Manager



**Zeb Polly**  
Systems Administrator



**Joed Polly**  
Video Production

...with help from  
the entire staff  
at ARCUS





# ***International Polar Year (IPY)*** **2007-2009**

The International Polar Year (2007-2009) is an exciting scientific campaign focusing on the world's polar regions!

IPY is a time for discovery, science, learning, and awareness about the polar regions with activities for youth, scientists, and the public.

**[www.ipy.org](http://www.ipy.org)**



## *Who are we talking with today?*



**Teacher**

**Elke Bergholz**  
United Nations  
International School  
New York, NY

**Amy Cox**  
NOAA Officer

**Researcher**

**Andy Clark**  
NOAA Science  
Technician

**Researcher**

**Bryan Johnson**  
NOAA Researcher



# **Elke Bergholz**

*PolarTREC Teacher*

*United Nations  
International School  
New York, NY*

- Marine Biologist, and Environmentalist, MS from University Rostock, Germany, MEd. Columbia University, N.Y.
- Biology teacher for the past 18 years in New York city, 13 years at the United Nations International School
- First time at the South Pole in 1998/99, with TEA
- This is the second time at the South Pole with the same research team and same researcher.



# **Patrick Cullis**

*NOAA Technician*

- 24 years old
- BS Mechanical engineering
- With NOAA for 2 years
- First time at the Pole, will be in green land and Summit Station
- Oct 2008 – Oct 2009 winter over at South Pole Station

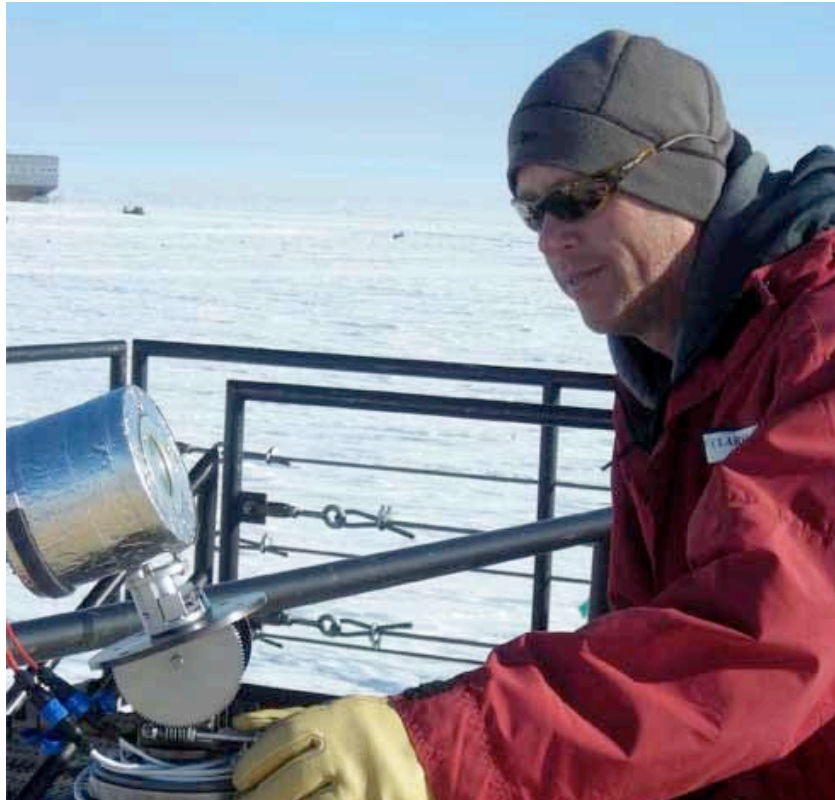




# Amy Cox

NOAA Officer

- BS Zoology
- BA Chemistry
- NOAA officer
- With NOAA for 3 years
- Clean Facility station Manager at South Pole Station
- Will over-winter at South Pole this year



# Andy Clark

NOAA Researcher

- BA Chemistry, 1993
- NOAA 1993 – 2006, now contracting for field assignments
- 2 times South Pole winter over
- 12 total trips to South Pole since 1999, was part of Elke's team in 1998/99
- Field Camp work in Greenland since 1996
- 6 summer seasons in Greenland mostly at Summit Station
- 3 winter phases (3 month)
- Various travels to other NOAA observatories: Barrow, Alaska, Mounalou. HI, Trinidad, CA, American Samoa



# **Bryan Johnson**

*NOAA Researcher*

*NOAA Environmental  
System Research Lab  
Boulder, CO*

- PhD in Atmospheric science, undergraduate B.S. in chemical engineering, Masters in meteorology
- Postdoctoral work (ozone hole research) with university of Wyoming
- Started with NOAA in Boulder , Colorado in 1994
- Has been in McMurdo 4 times during postdoctoral
- At South Pole with NOAA the 3rd time

# David Hofmann

NOAA Researcher

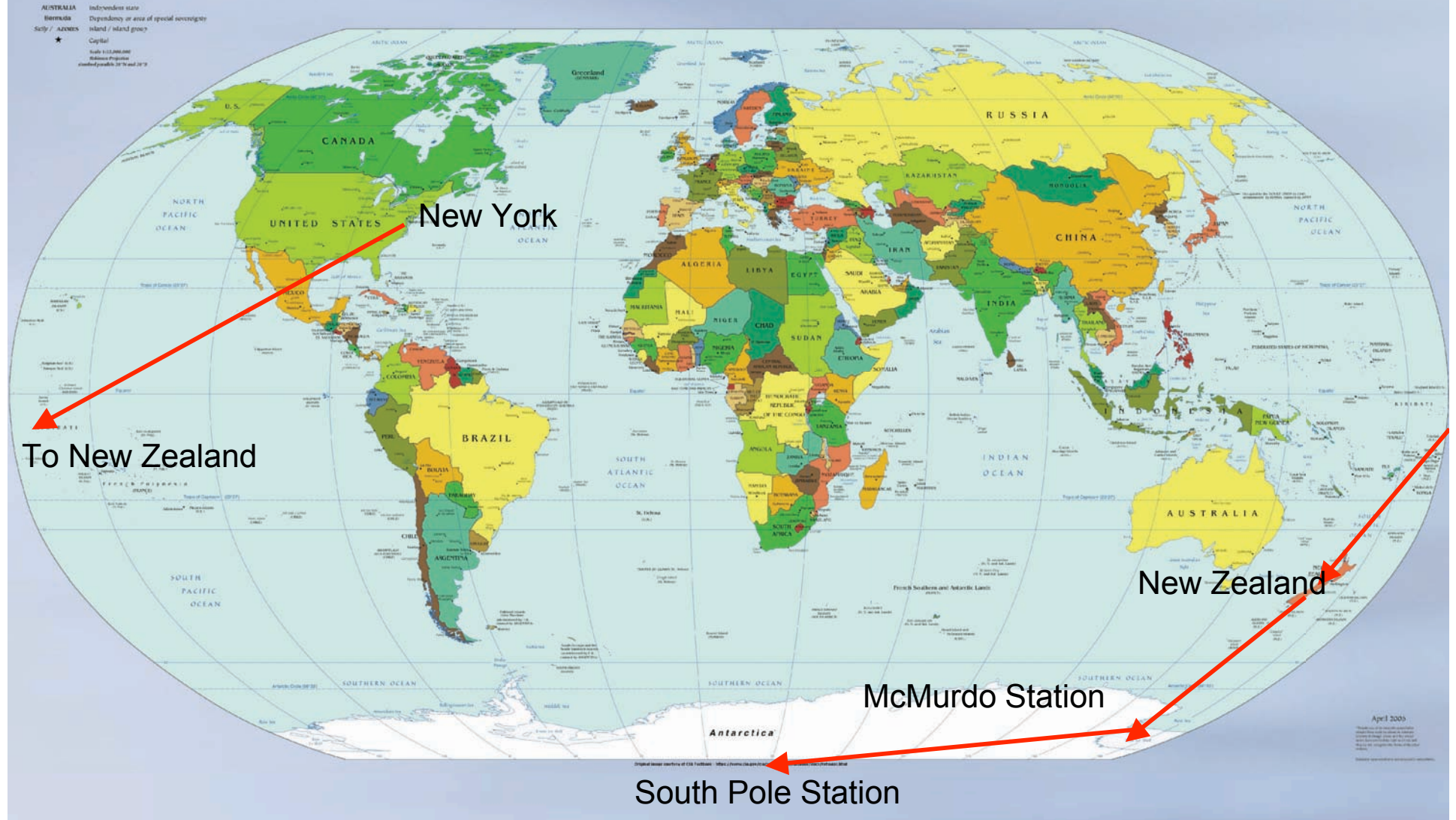
NOAA Environmental  
System Research Lab  
Boulder, CO

- Director of the Global Monitoring Division of the Earth System Research Lab in Boulder, CO
- Studied the ozone hole with balloons during the National Ozone Expedition (NOZE) to Mc Murdo Station in August 1986
- With NOAA, we have been studying the ozone hole with continuous balloon measurements at the South Pole from 1986-2007
- The primary purpose of the research is to track the recovery of the ozone hole, which will not occur completely for another 60 or more years.



# Where is Ms. Bergholz and the Team?

Political Map of the World, April 2006



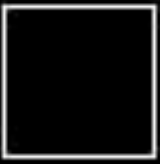


# Antarctica

★ South Pole Station

★ McMurdo Station

375 mi



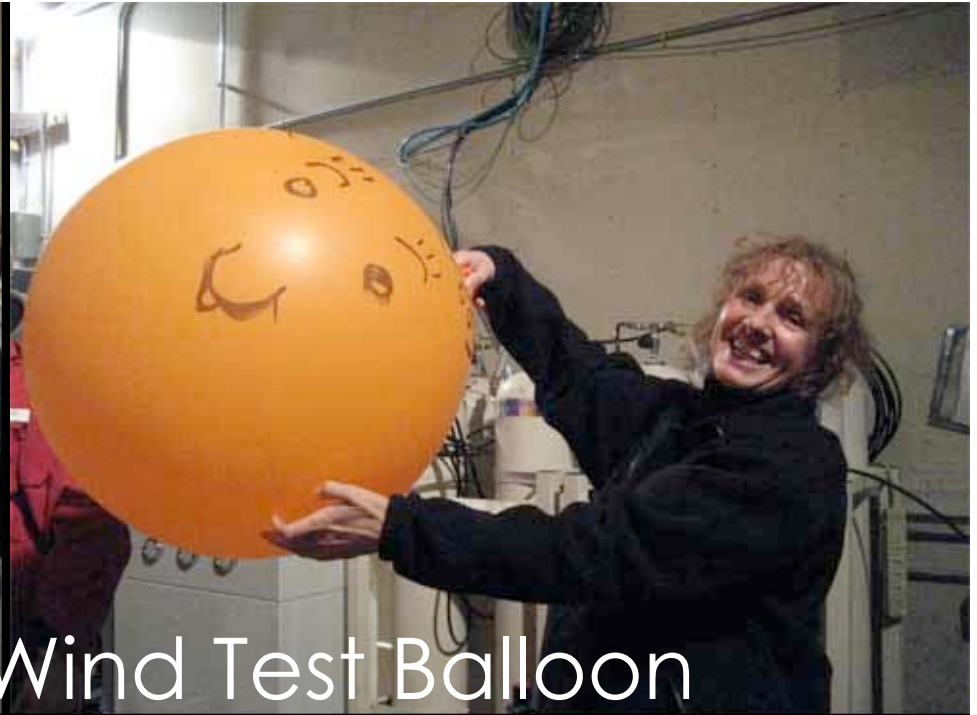
# South Pole Ozone Changes Project

- Collecting surface ozone in the troposphere to research photochemical phenomena of elevated ozone data at this particular time of the year at the South Pole with strong sunshine onto the snow
- Requires new technique of collecting data lower than 1000m
- Retrieving the ozone sonde with a snowmobile and GPS
- Challenge: lounge at SPS avoiding traffic and sensitive areas

# Snowmobile Training



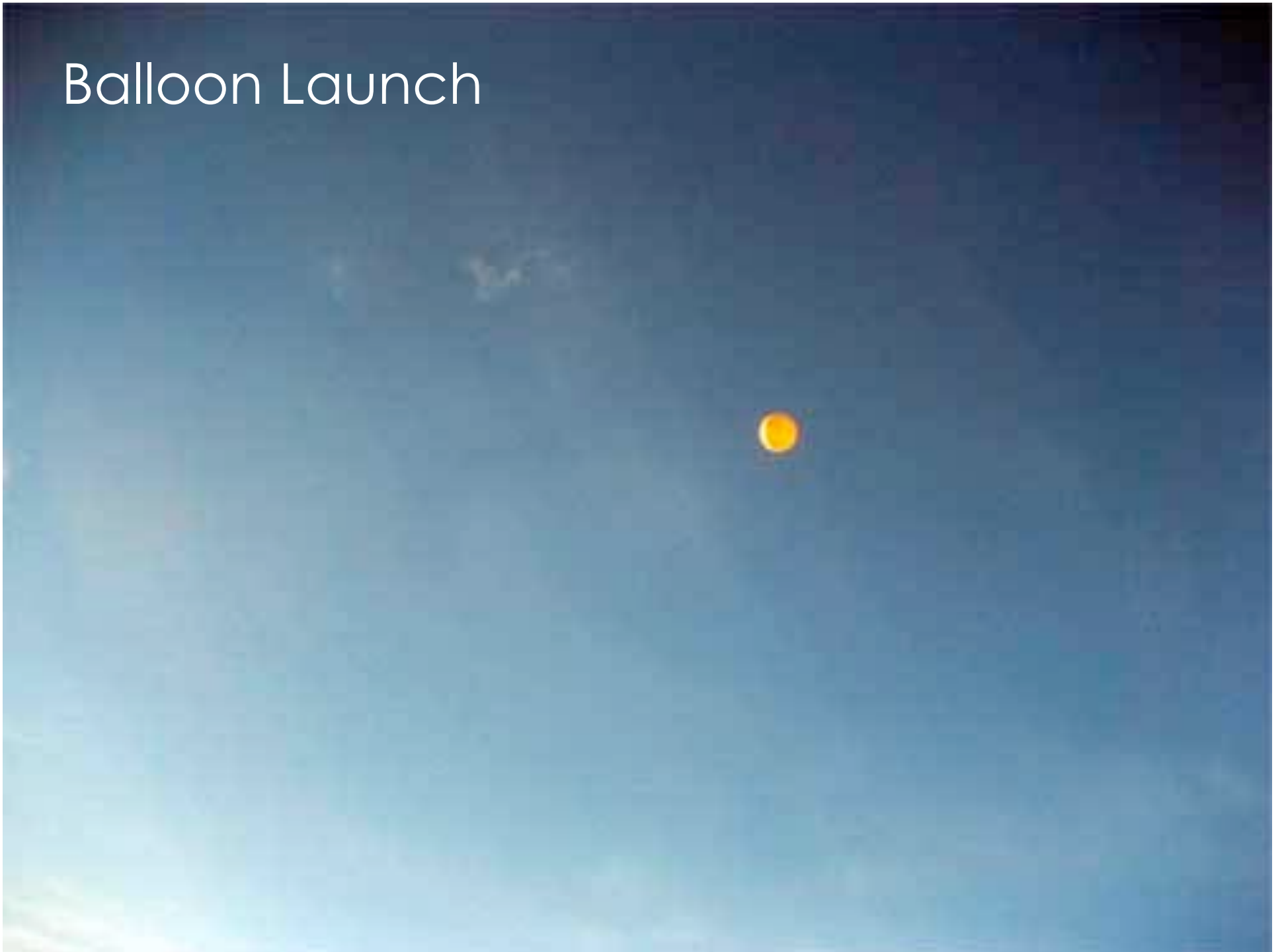




Decorating the Wind Test Balloon



# Balloon Launch





# The Surface Ozone Balloon



# Ozone Balloon Launch



# Retrieving the Balloon





# Bryan & Elke Arrive at South Pole



Hercules or LC130

# New South Pole Station





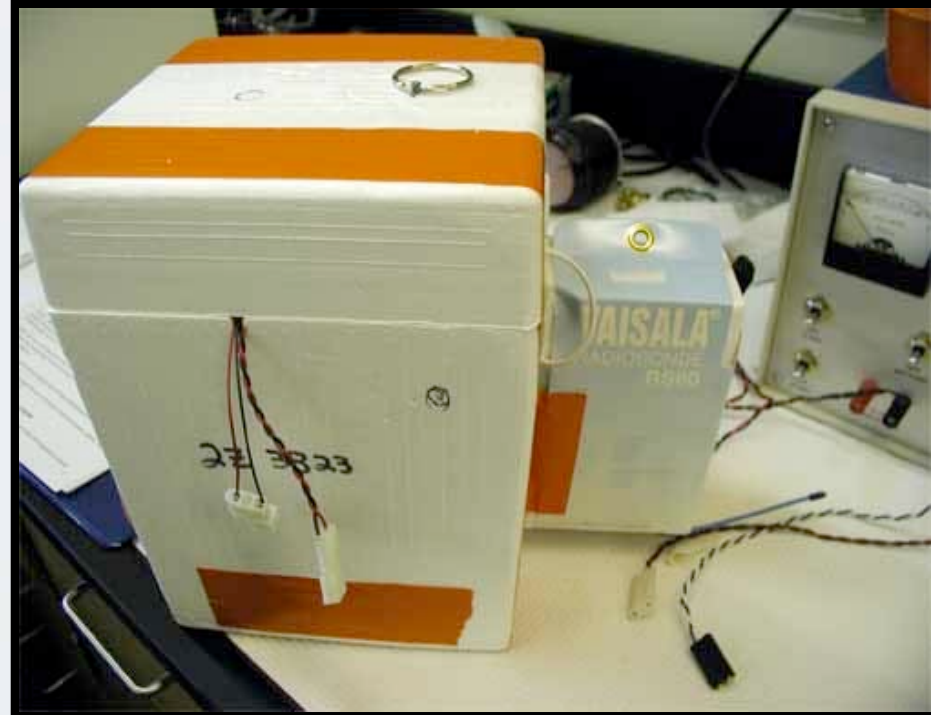
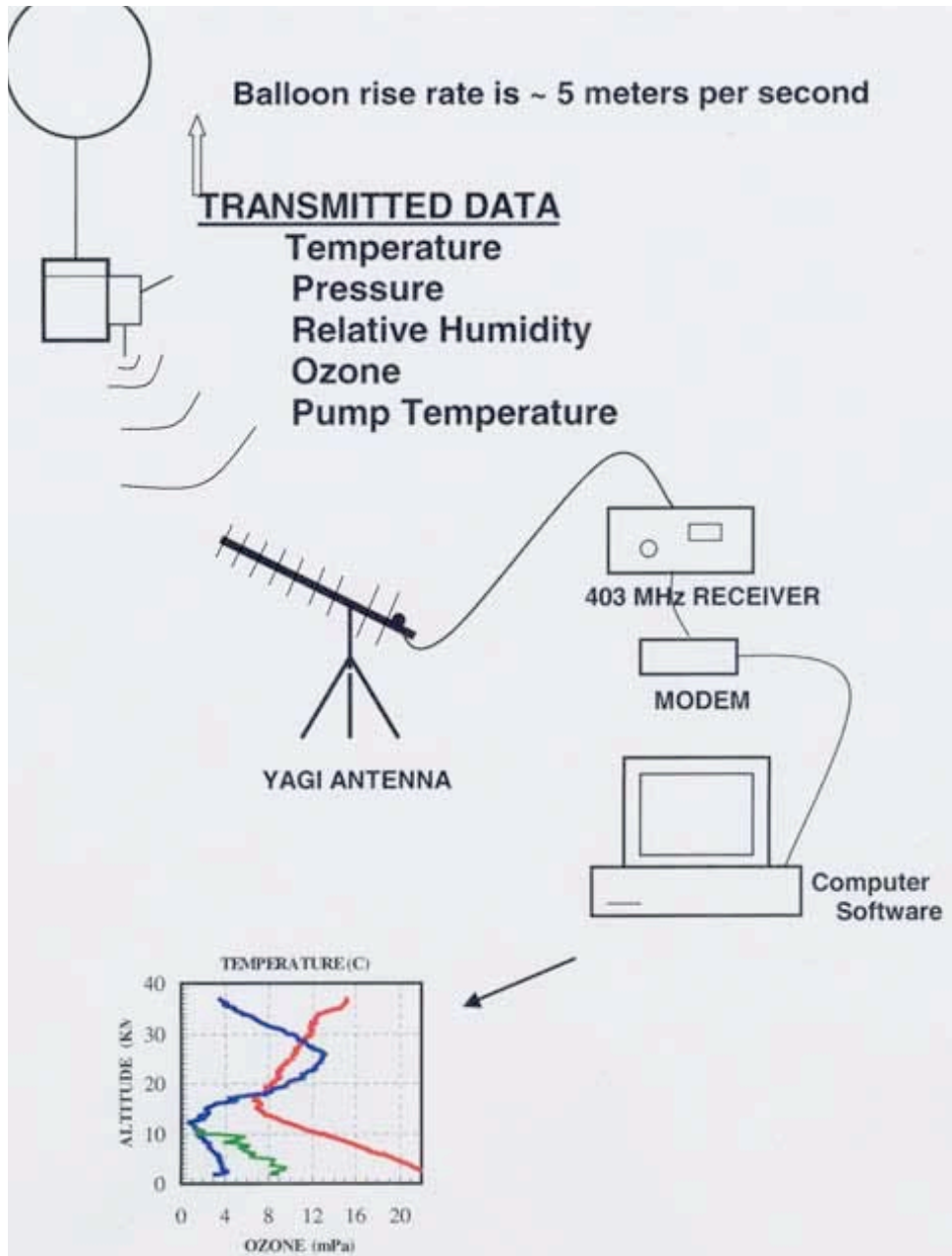


# New Ozone Sonde Ballooning

- for Ozone profiles up to 35 km

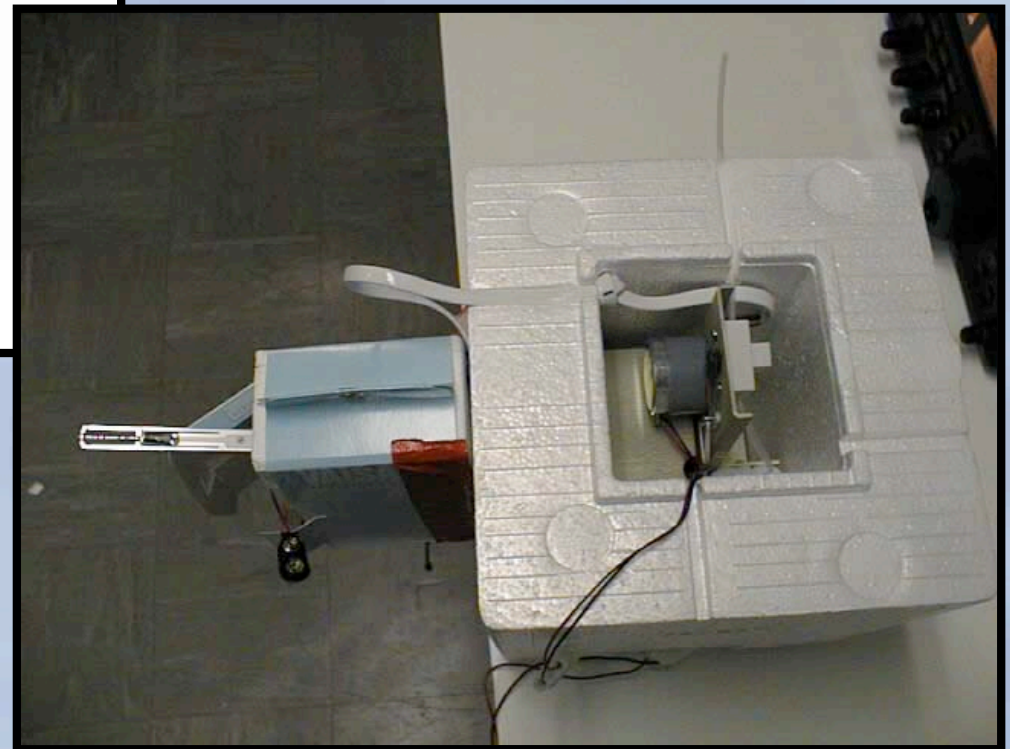
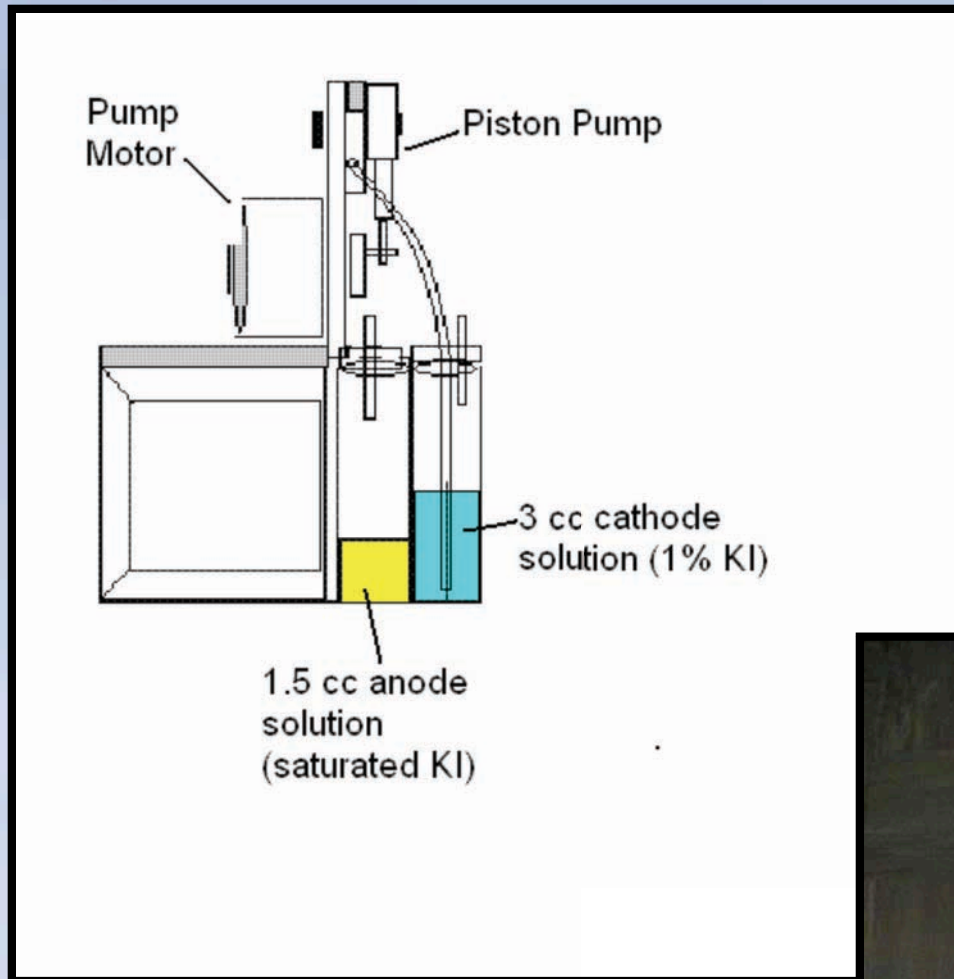


# Ozone Sonde Setup



Side view of sonde with radio sonde on the right

# Diagram of Sonde



Top view of sonde with ozone sonde inside the white.



# Ozone Sonde Test Units

***Questions?***



# Check out and register for upcoming events!



19 December 2007 - Live with Elke Bergholz - South Pole

13 Decemebr 2007 -Live with Brandon Gillette for IPY Ice Sheet Day

Watch for additional events at: [www.polarrec.com](http://www.polarrec.com).

*Thank  
You!*



*If you have further questions,  
please contact us at  
[info@polartrec.com](mailto:info@polartrec.com) or call  
1-907-474-1600*

