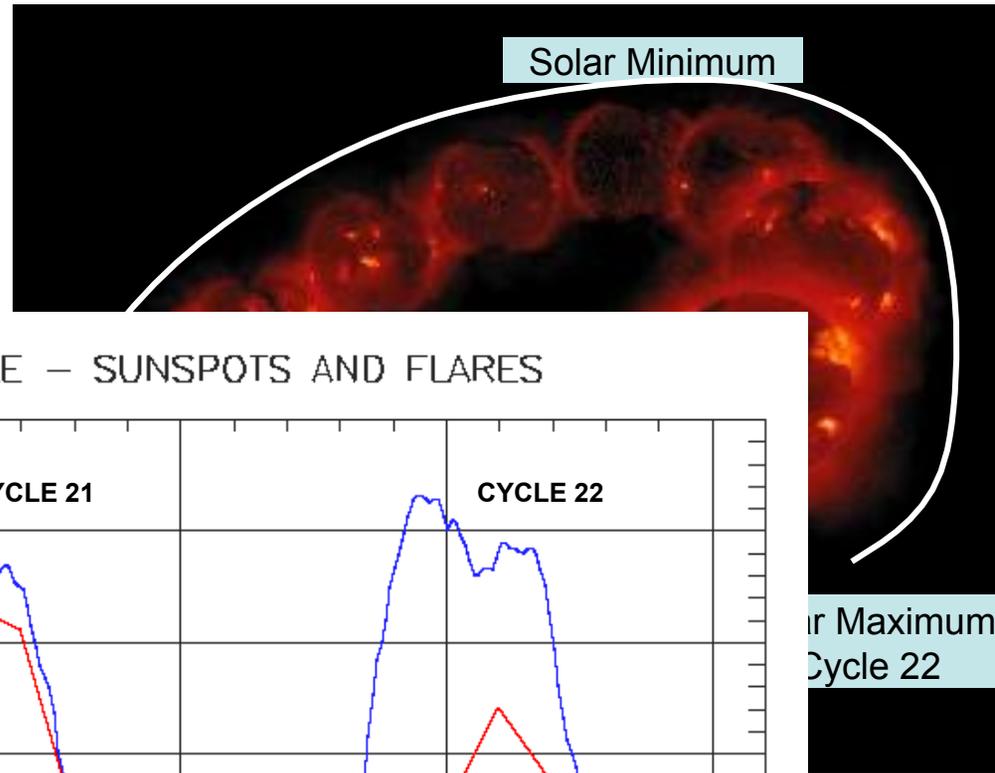


**Douglas Biesecker**

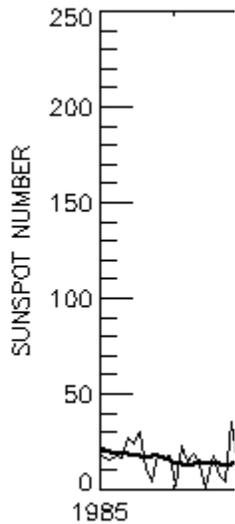
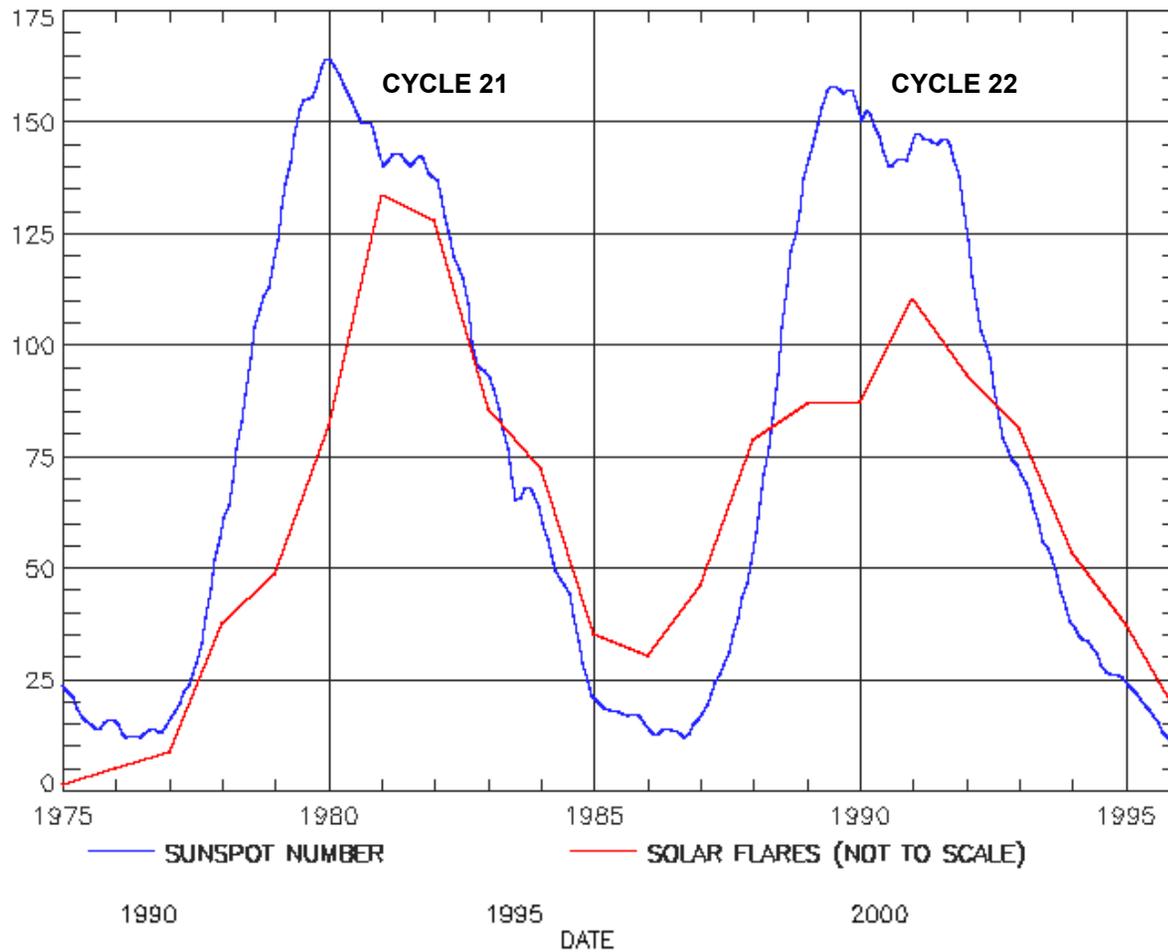
NOAA/Space Environment Center  
Chair of Solar Cycle 24 Prediction Panel

# WHAT IS A SOLAR CYCLE?

Solar activity rises and falls over an 11 year cycle



SOLAR CYCLE – SUNSPOTS AND FLARES



# The Solar Cycle 24 Panel

- Charged with determining official prediction for Solar Cycle 24 for NOAA, NASA, and the International Space Environment Service (ISES)
- Panel chaired by NOAA, funded by NASA
- International membership
- The panel has 12 voting members
  - Only 11 voted on these predictions

# The Panel is today releasing predictions for

- The impending solar minimum
  - Marking onset of Cycle 24
- The peak sunspot number expected for Cycle 24
- The time of the peak sunspot number
- What follows is the consensus of the panel

# Solar Minimum

- **March, 2008** ( $\pm 6$  months)
  - Marks the end of Cycle 23 and start of Cycle 24
  - The length of Cycle 23 will then be 11.75 years
    - Longer than the average of 11 years

# Cycle 24 Maximum

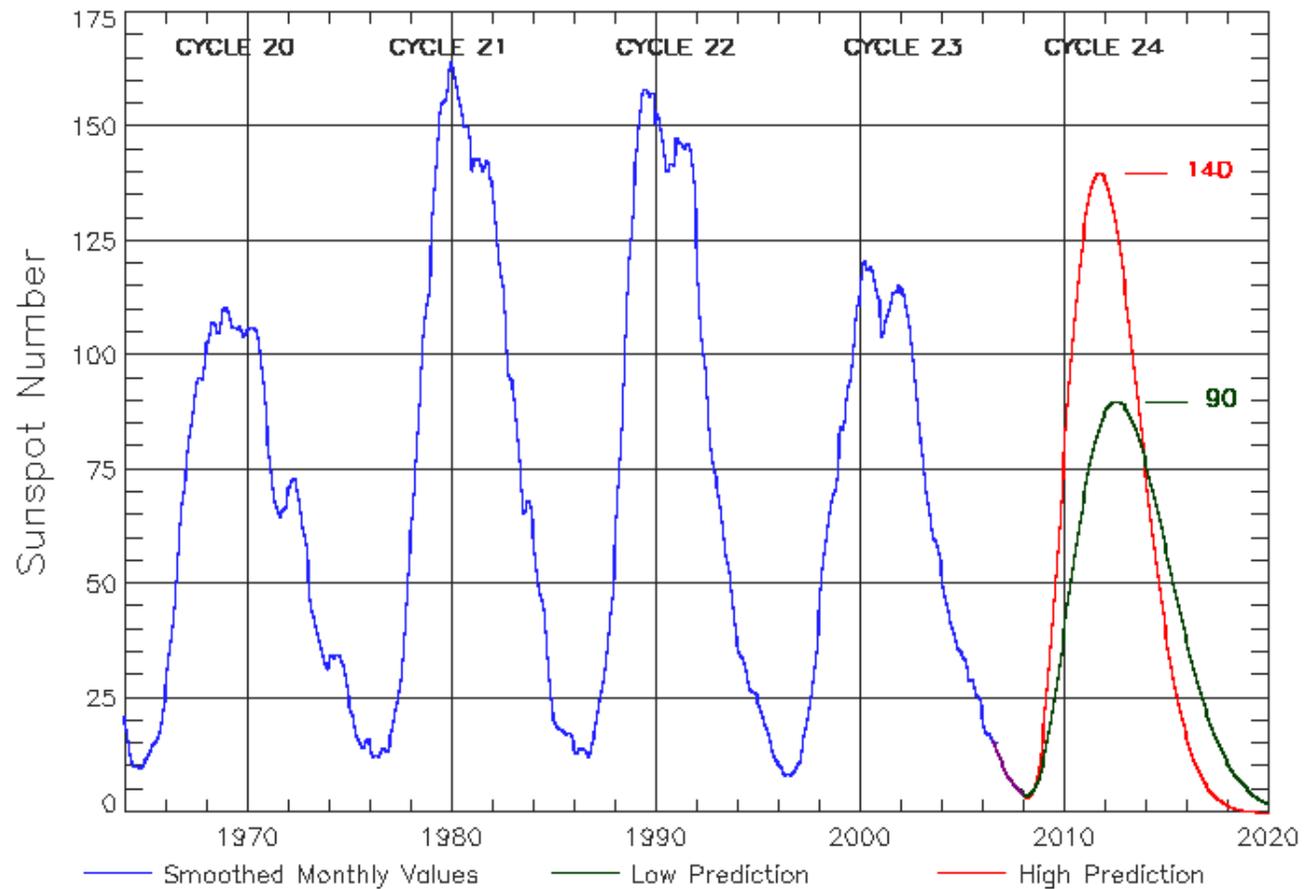
- Will peak at a sunspot number of **140(±20)** in **October, 2011**

Or

- Will peak at a sunspot number of **90(±10)** in **August, 2012**
  - An average solar cycle peaks at 114
  - The next cycle will be neither extreme, nor average
- But, the panel is split down the middle on whether it will be bigger than average or smaller than average

# The April 25 Prediction

Solar Cycle 24 Sunspot Number Prediction



# A few comments...

- Why the panel still disagrees...
  - We're still a long way from solar minimum
- What's the main difference between the big (140) and small (90) predictions?
  - Big – assume solar memory lasts 20-30 years
  - Small – assume solar memory lasts 11 years

# There is still work to do...

- What would cause the big predictors to think small
  - If solar minimum drags out beyond March, 2008
- What would cause the small predictors to think big
  - If either the magnetic field at the sun's poles increases in strength or geomagnetic activity increases before March, 2008

# Thus, consensus is expected...

- About March, 2008
- The panel will re-evaluate conditions on the sun every 3 months
- The panel will update this prediction annually, or as things change.