

# Solar Cycle Update

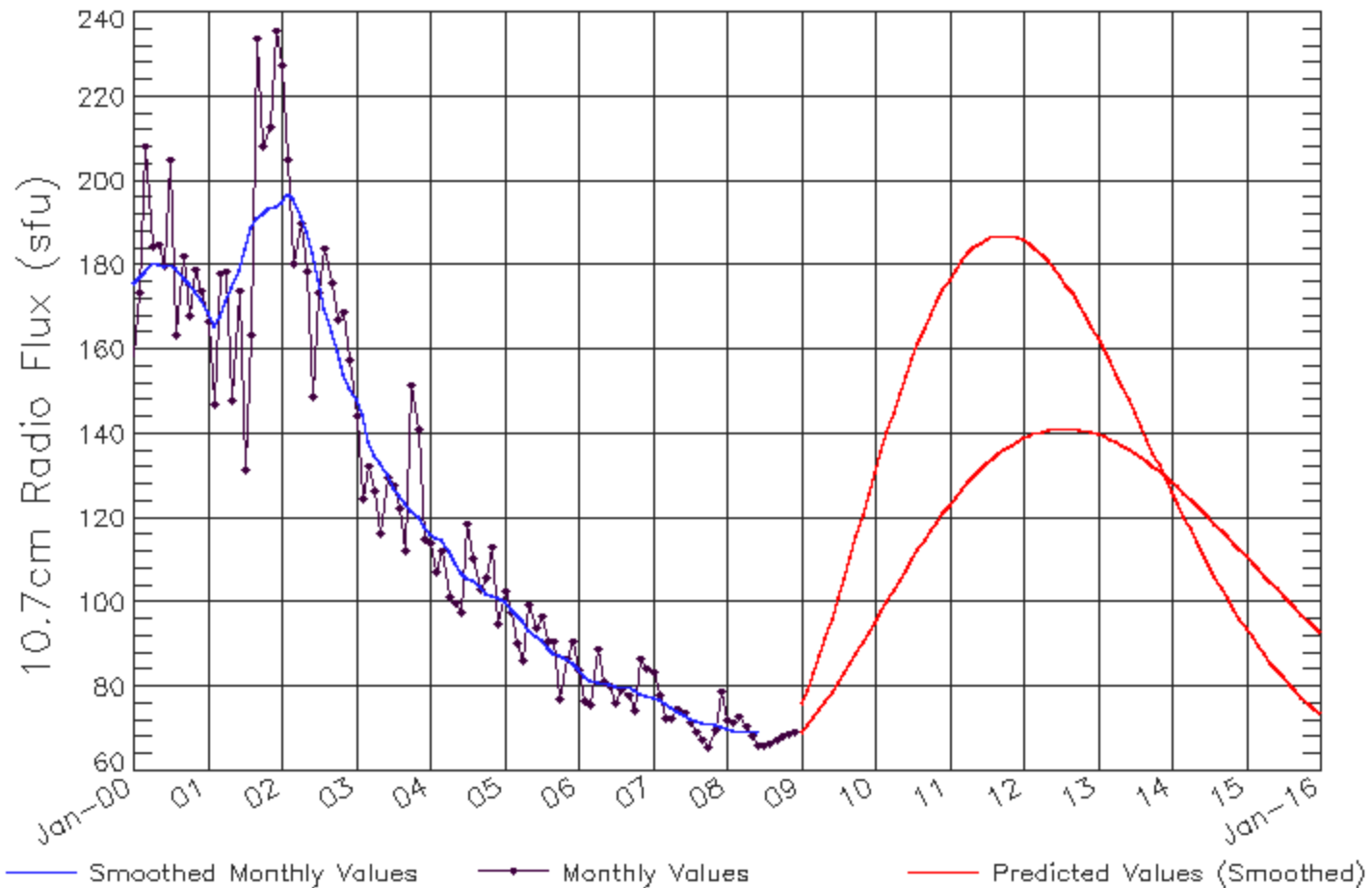
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**O. C. St. Cyr (NASA-GSFC)**

**H. Xie (CUA)**

# The Official NOAA Viewpoint

ISES Solar Cycle F10.7cm Radio Flux Progression  
Data Through 31 Dec 08



Updated 2009 Jan 3

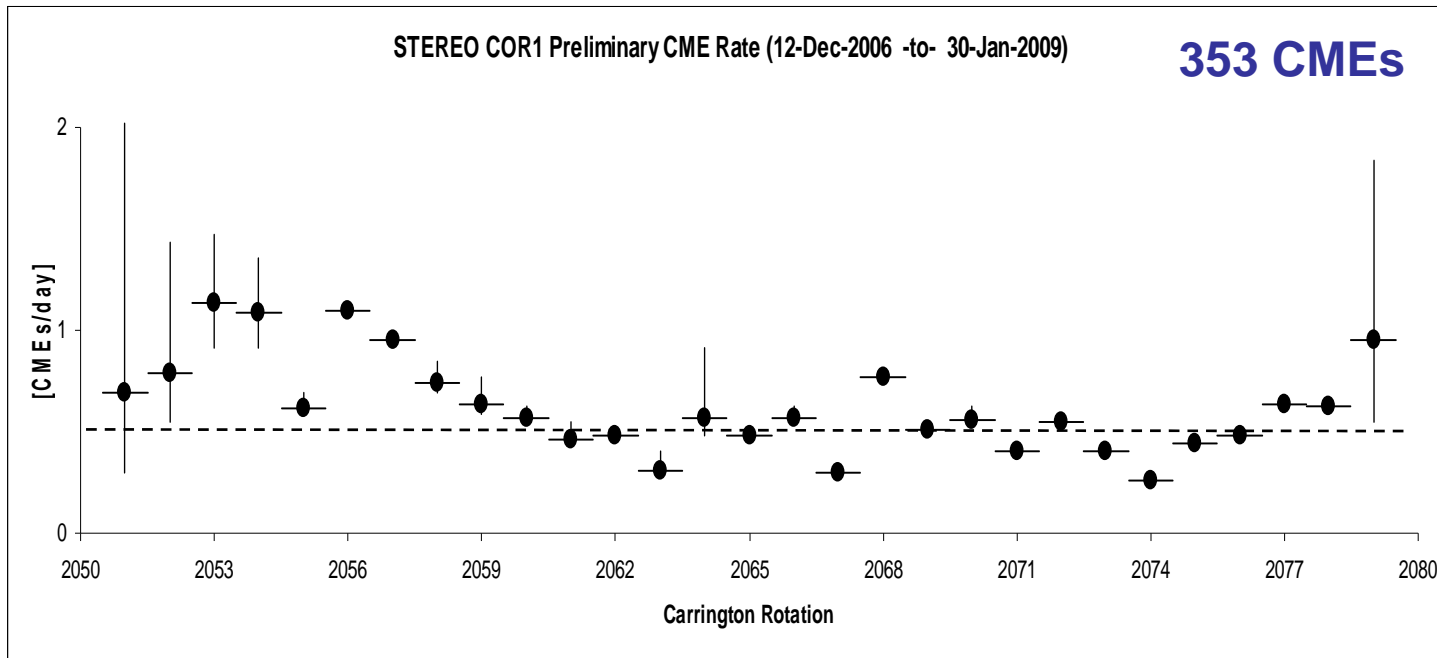
NOAA/SWPC Boulder, CO USA

## Preliminary CME Catalogue

St. Cyr (Jan-Aug 2007)

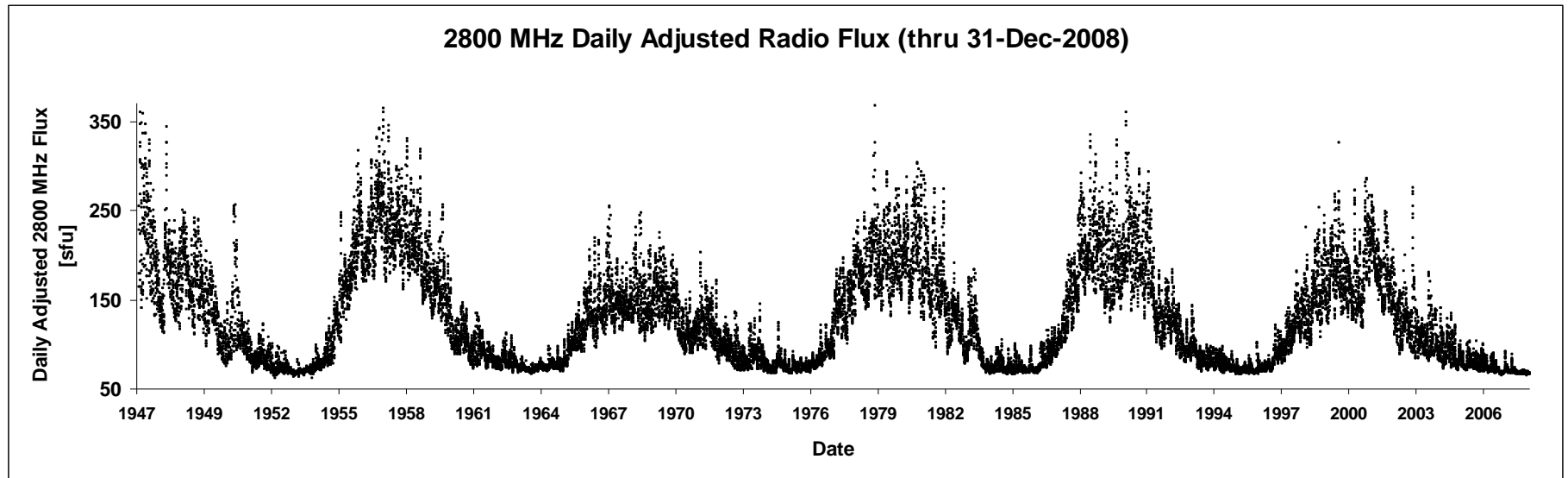
Hong Xie (Sep 2007-Sep2008)

St. Cyr (Oct 2008-Jan2009)

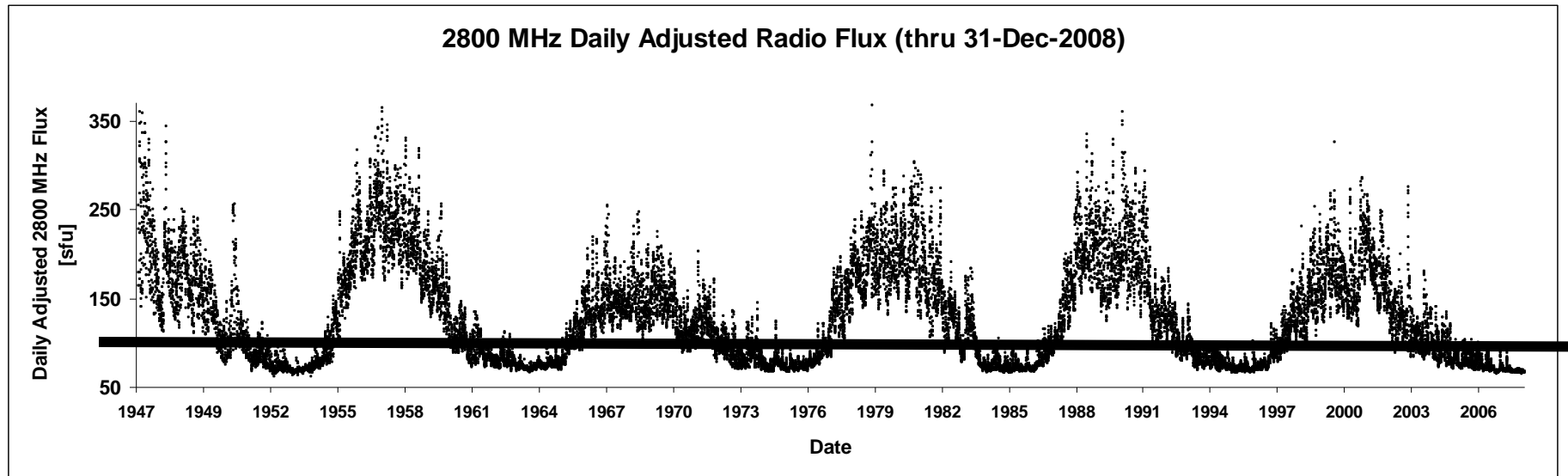


SOHO LASCO  
CME Rate in  
1996-1997 was  
~0.5 CMEs/day

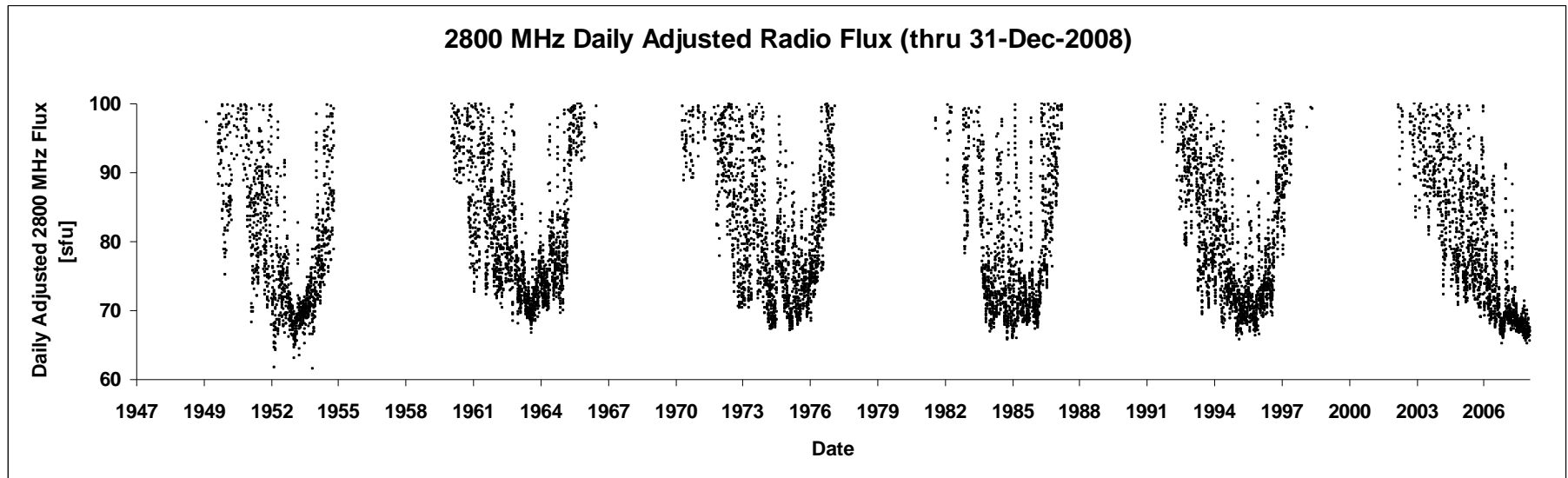
# Historic 2800 MHz



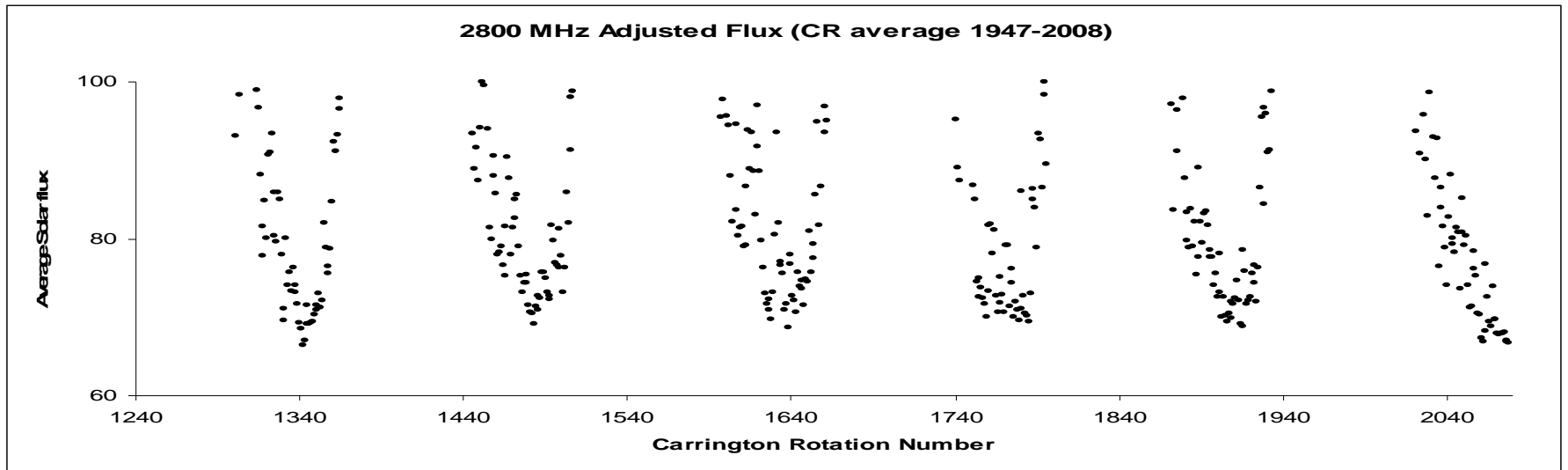
# Historic 2800 MHz



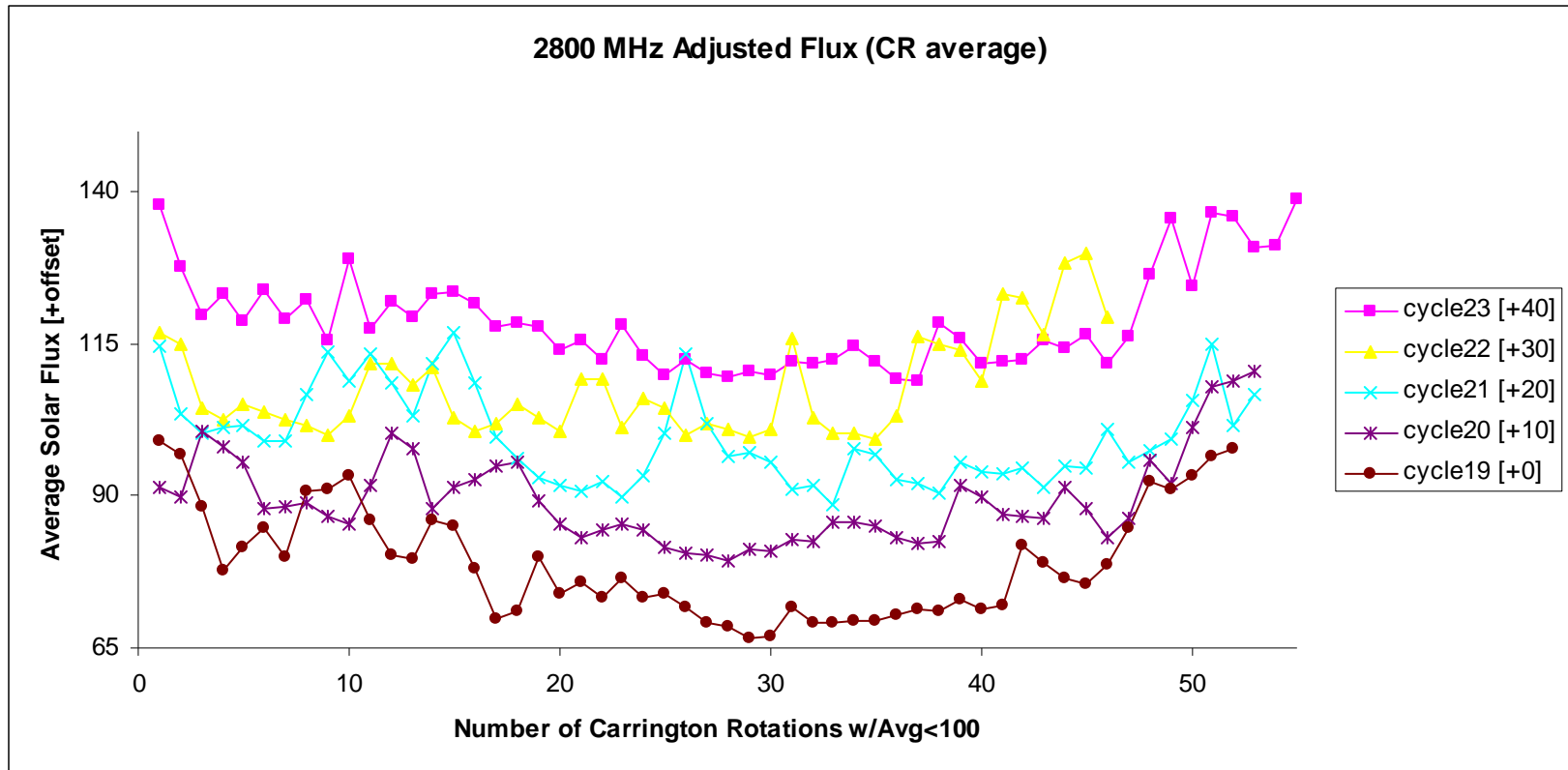
# Historic 2800 MHz at Minimum



# Historic 2800 MHz at Minimum

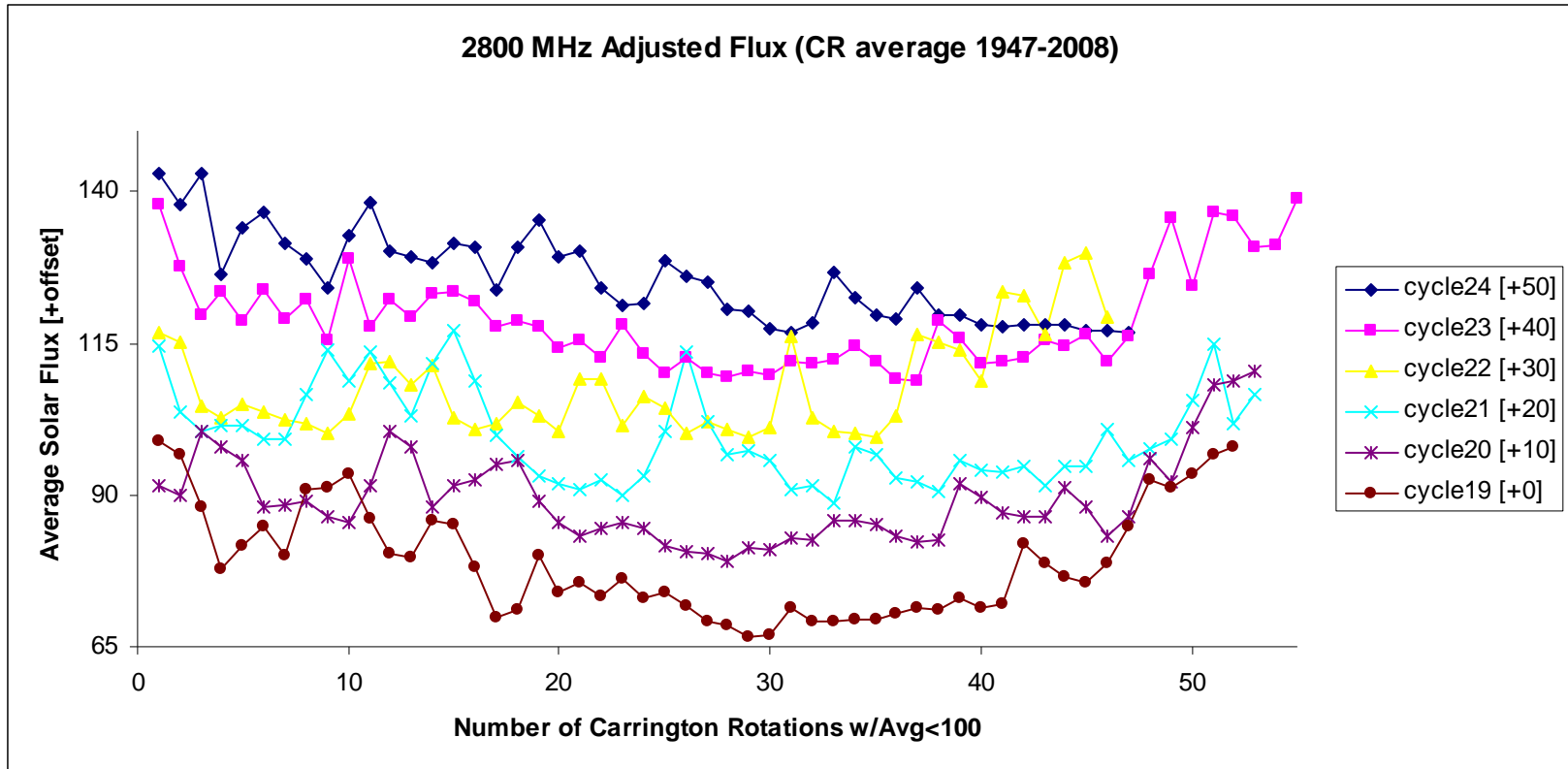


# Historic 2800 MHz at Minimum

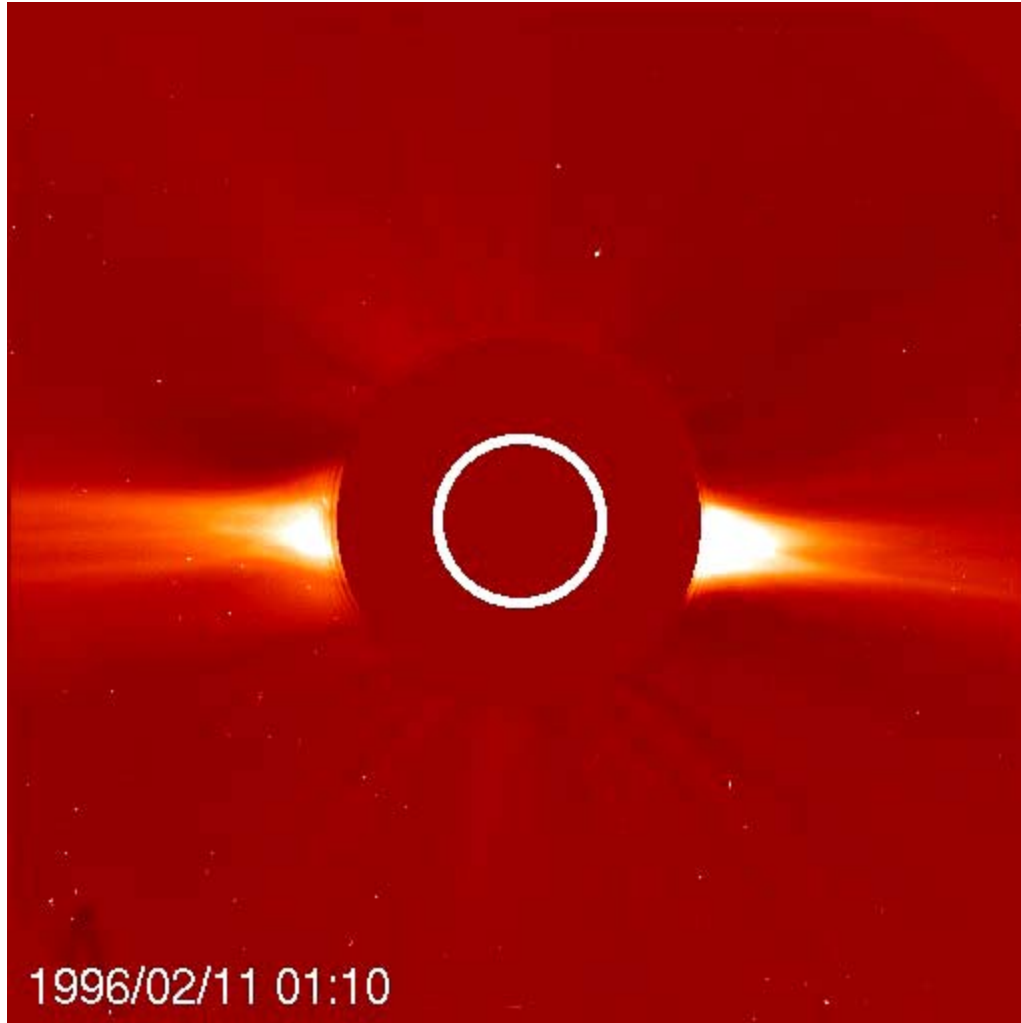




# Historic 2800 MHz at Minimum



# DEFINITION of “Minimum” Corona

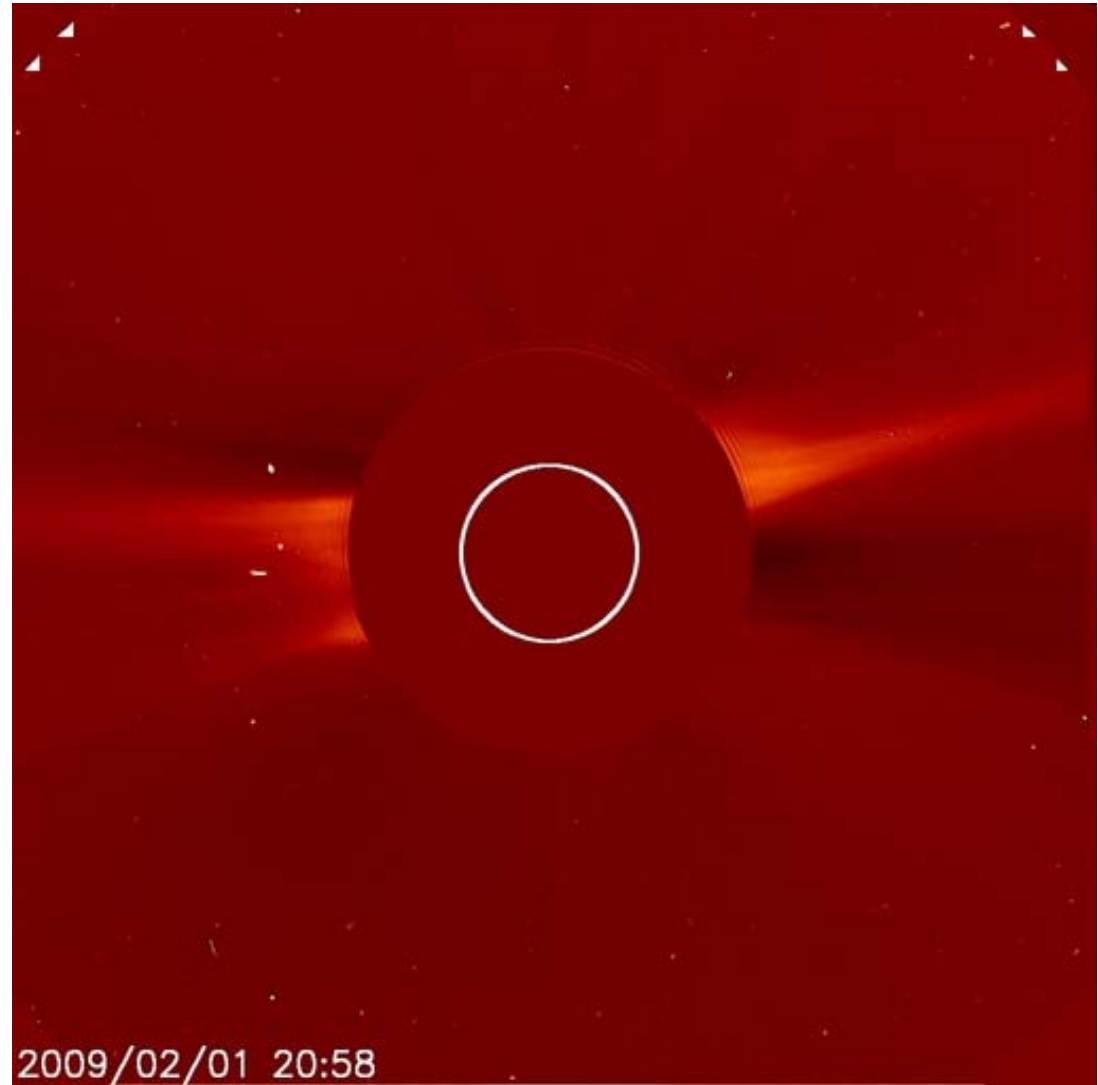


- During the descending phase, the white-light coronal streamers appear first to be “quadrupolar”
- Then a tilted dipole
- Finally a dipole appears for 6-10 rotations when the magnetic and rotational poles are aligned

**SOHO LASCO C2**

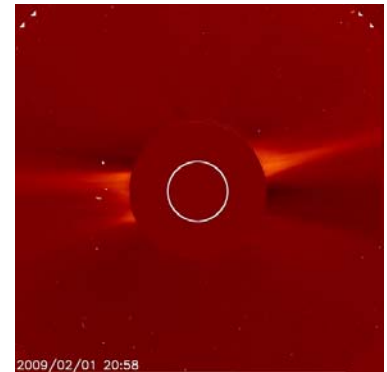
# Corona is Not at Solar Minimum Yet!

Has not collapsed  
to a dipole

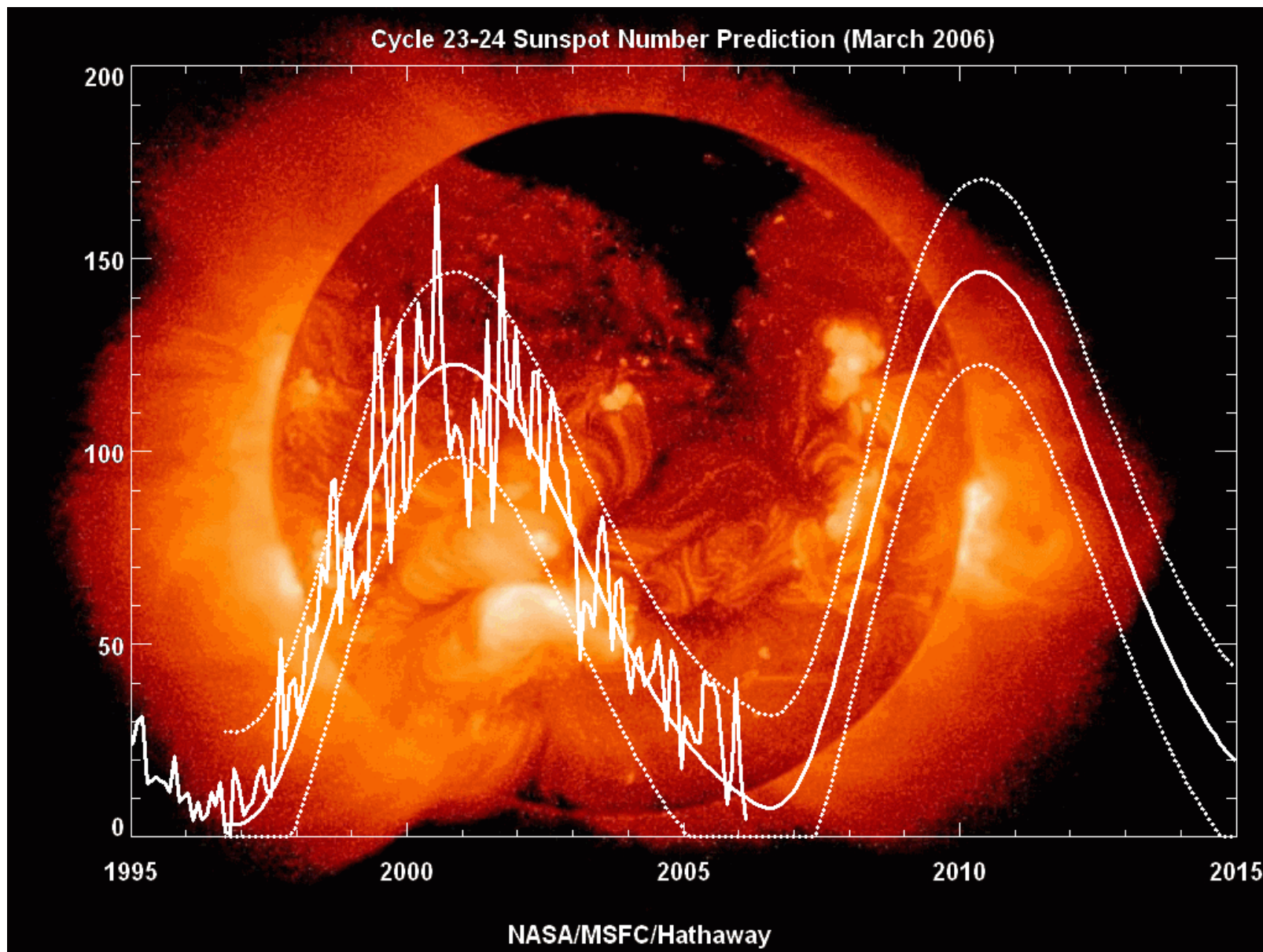


# Summary

- CR-averaged CME rate is  $\sim 0.5/\text{day}$ , typical of solar minimum
- CR-averaged 2800 MHz flux is  $\sim 70$  sfu, near solar minimum values, but is beginning to extend beyond historical durations
- We appear to be only part-way through solar minimum phase based on
  - Duration of CME rate and 2800 MHz
  - Morphology of the white-light corona



# Hathaway Prediction (March 2006)



# Hathaway Prediction (Jan 2009)

