

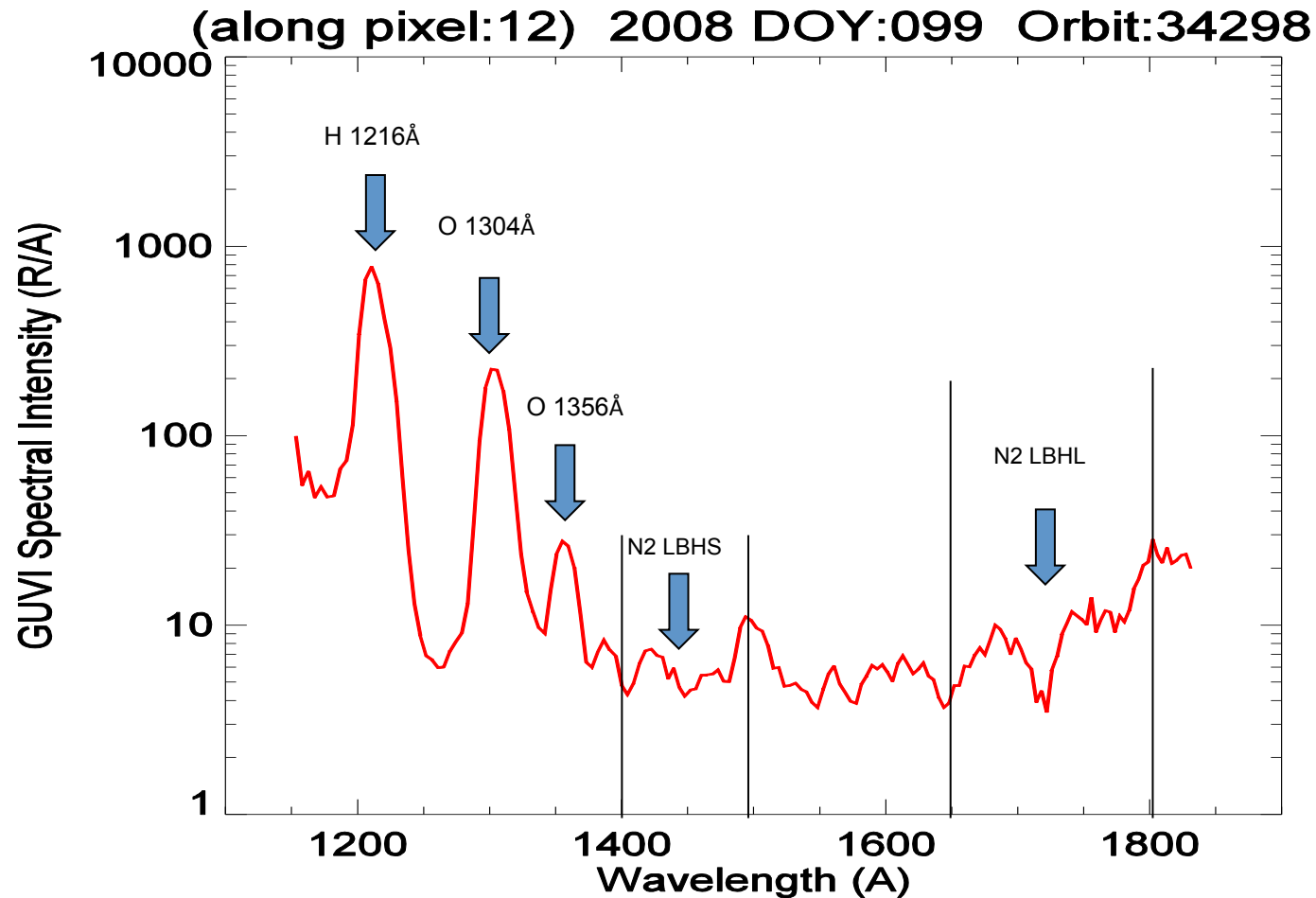
# Global Auroral Boundaries from FUV Imagers

*Yongliang Zhang*

The Johns Hopkins University Applied Physics Laboratory

# TIMED/GUVI (1) and DMSP/SSUSI (4)

The newest F19 DMSP/SSUSI was launched on April 3

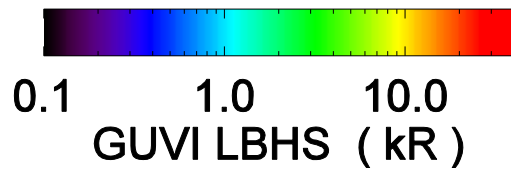
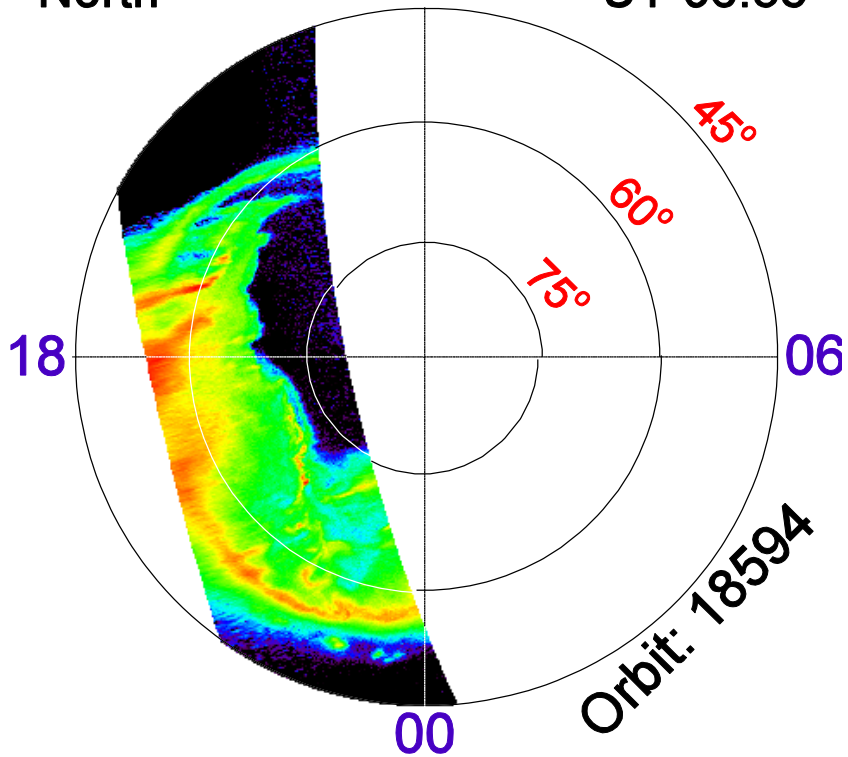


May 15, 2005

North

12

UT 06:53

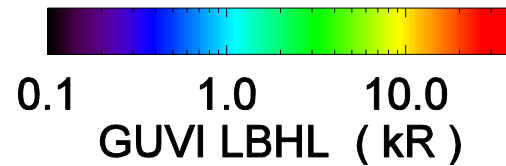
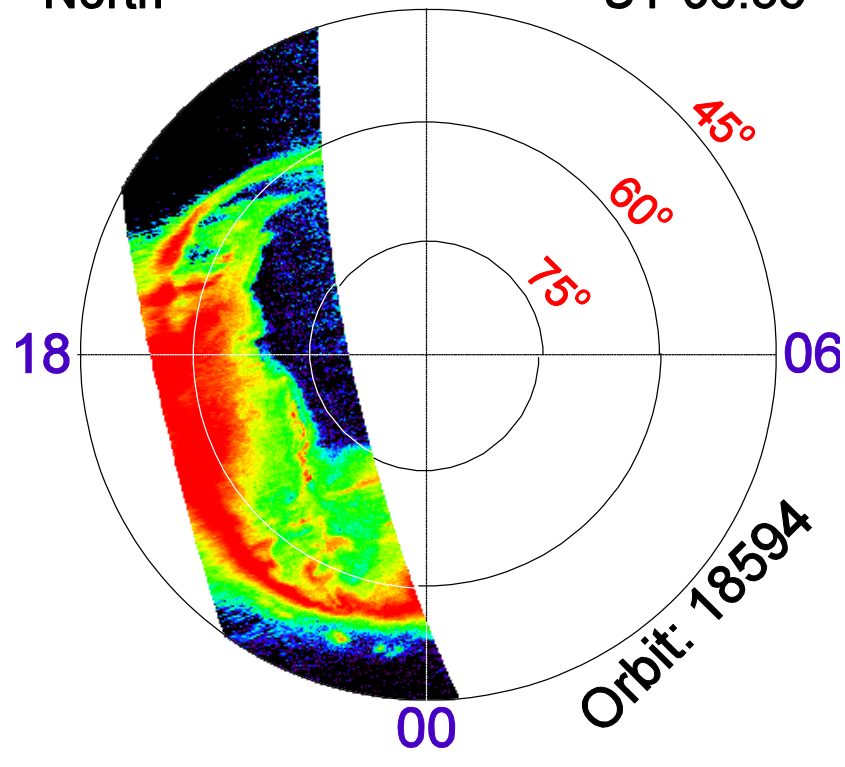


May 15, 2005

North

12

UT 06:53

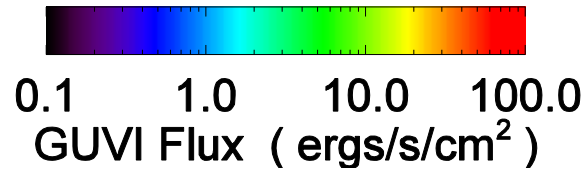
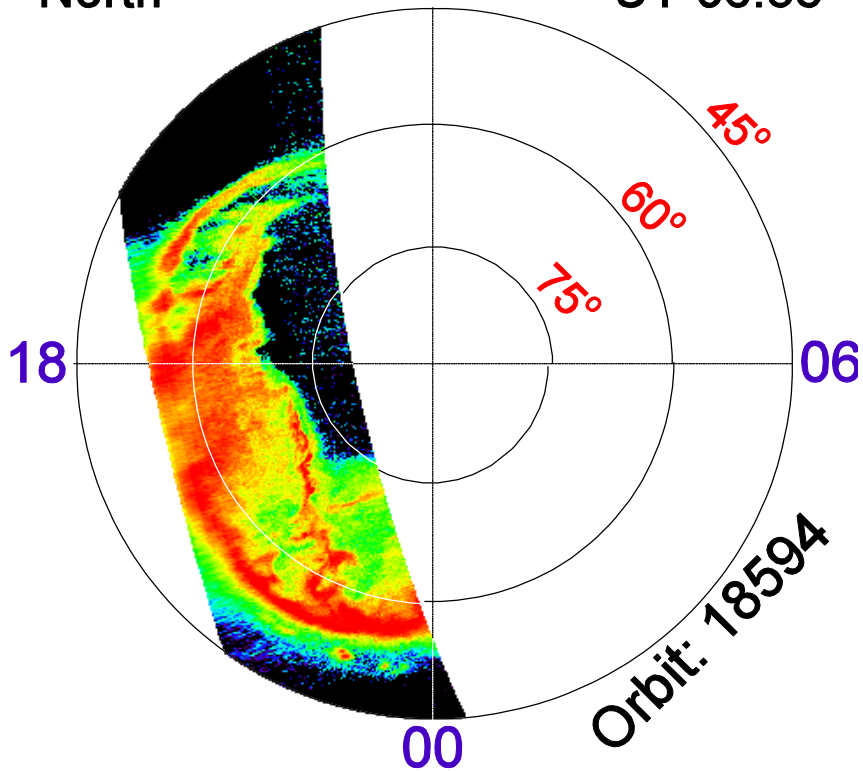


May 15, 2005

North

12

UT 06:53

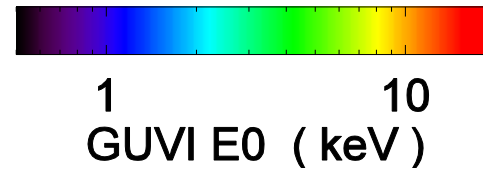
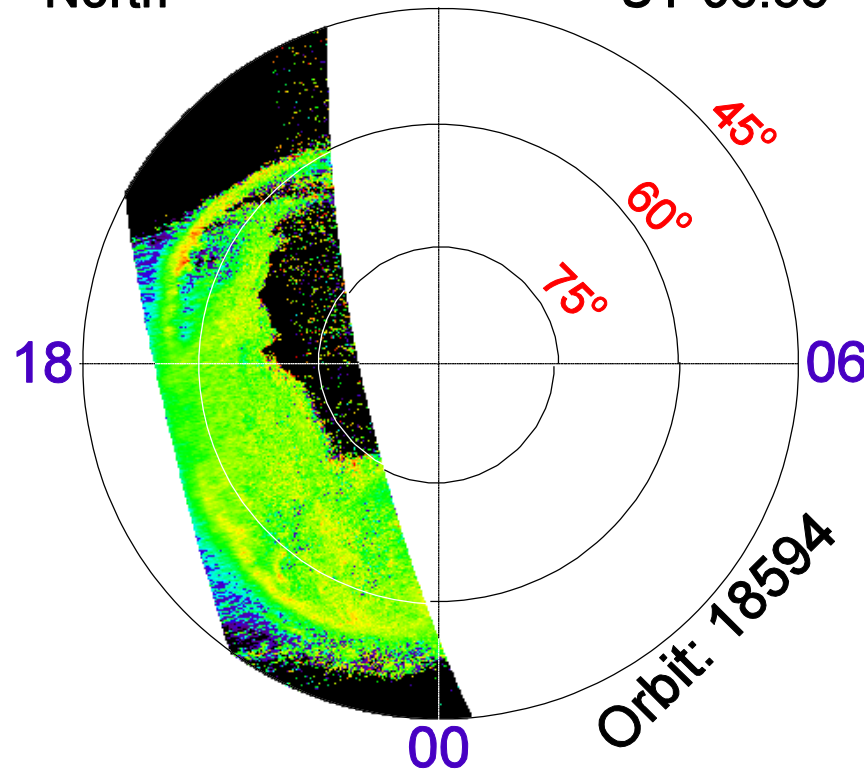


May 15, 2005

North

12

UT 06:53



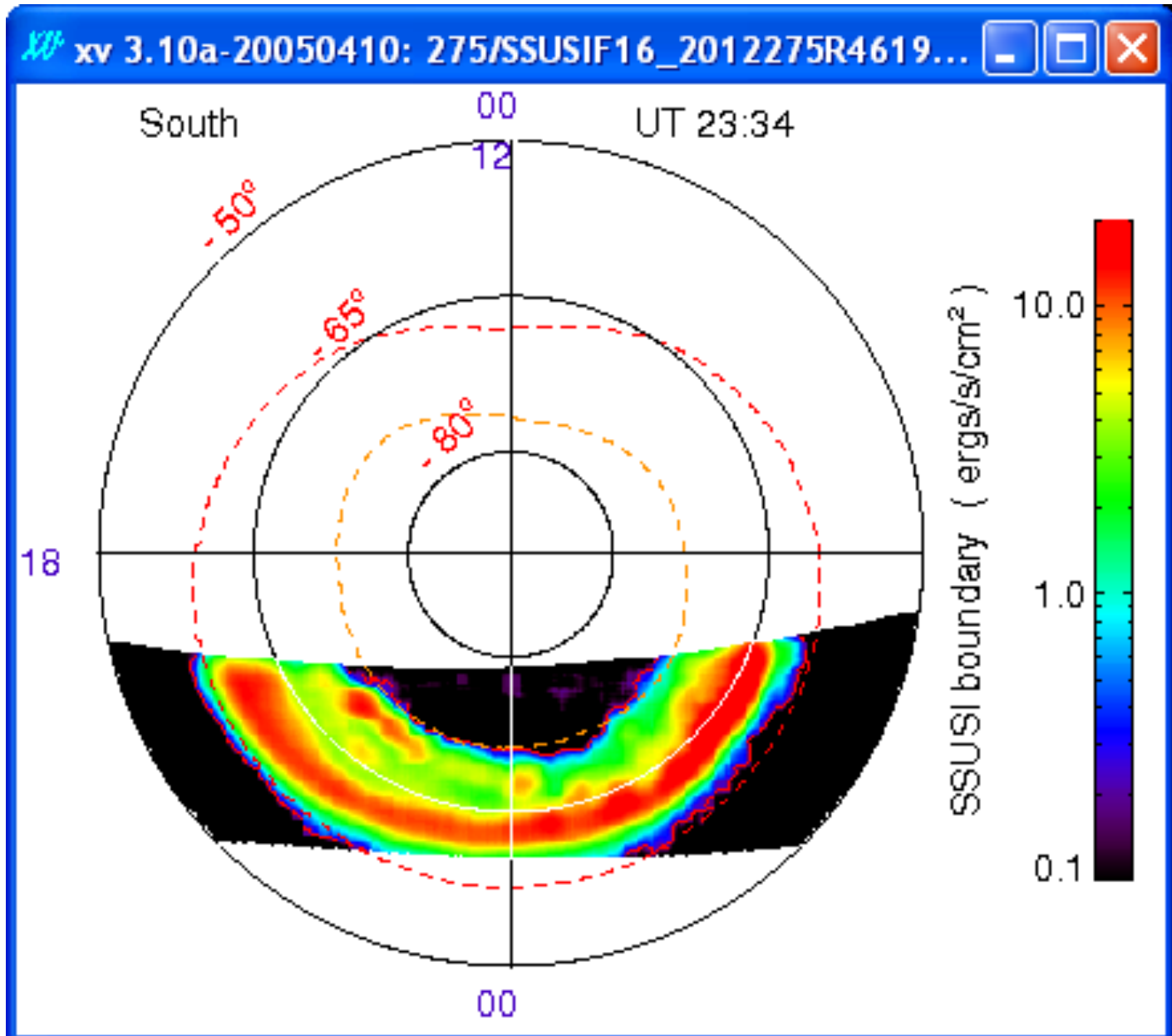
# Aurora Boundary Definition

- Auroral energy flux map
- Fixed energy flux threshold (0.2 ergs/s/cm<sup>2</sup>)
- Swath boundary
- GUVI based auroral model
- Global boundary
- Equatorward and poleward boundaries

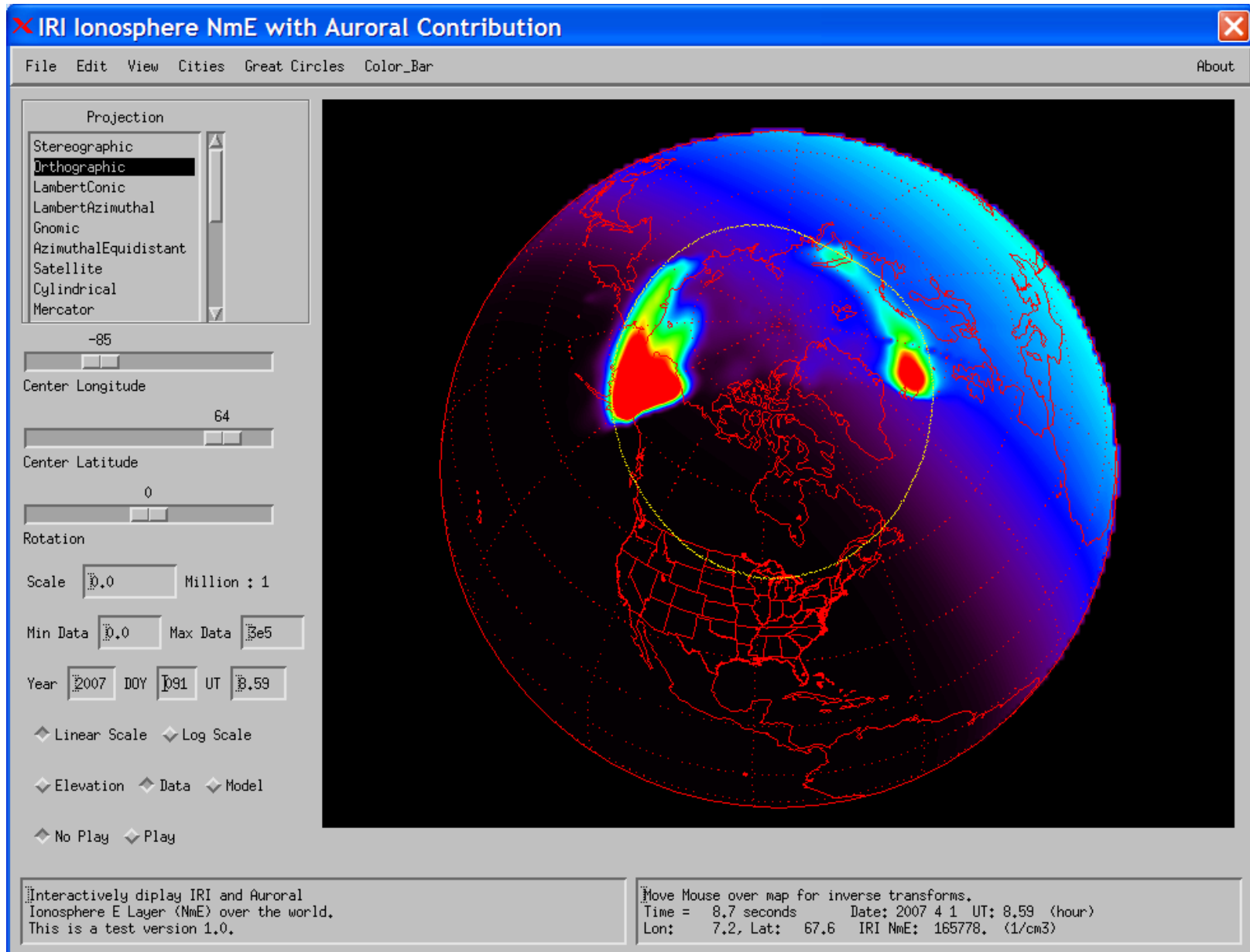
How to determine boundaries?

Flux map → equatorward and poleward swath boundaries

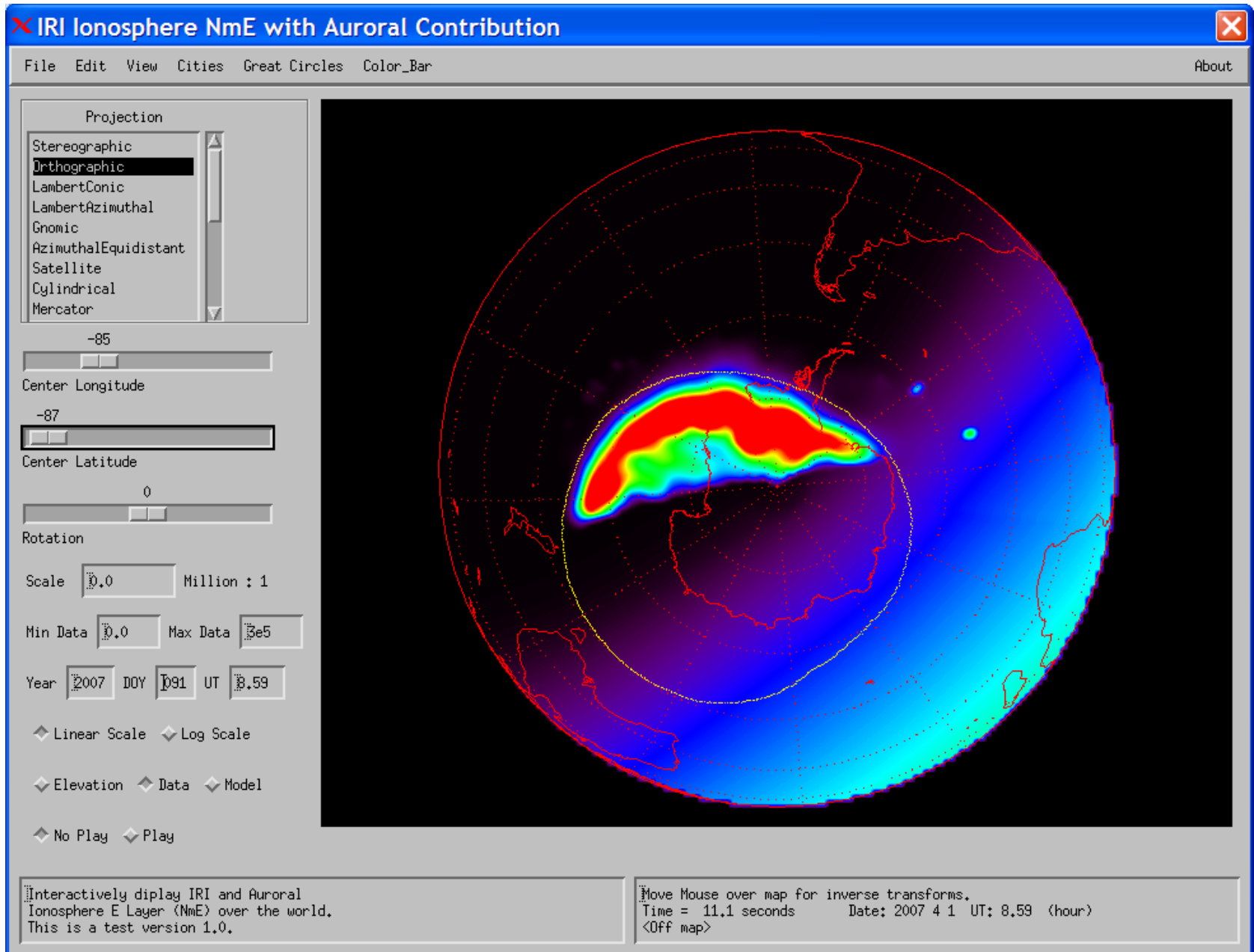
→ global auroral oval boundary



# Assimilation of measured SSUSI NmE and boundary in IRI (Kp =4.3, April 1, 2007, 8:59UT)

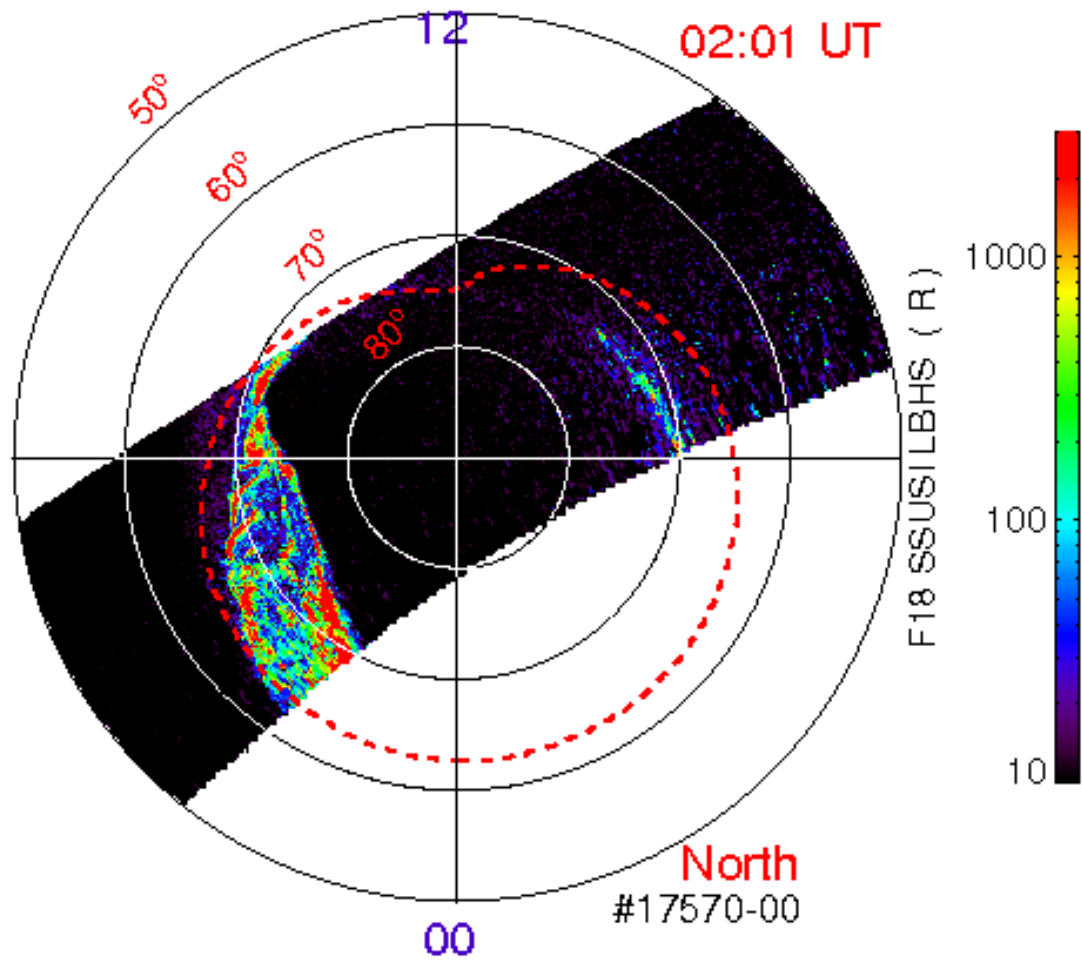


# SSUSI data in southern hemisphere

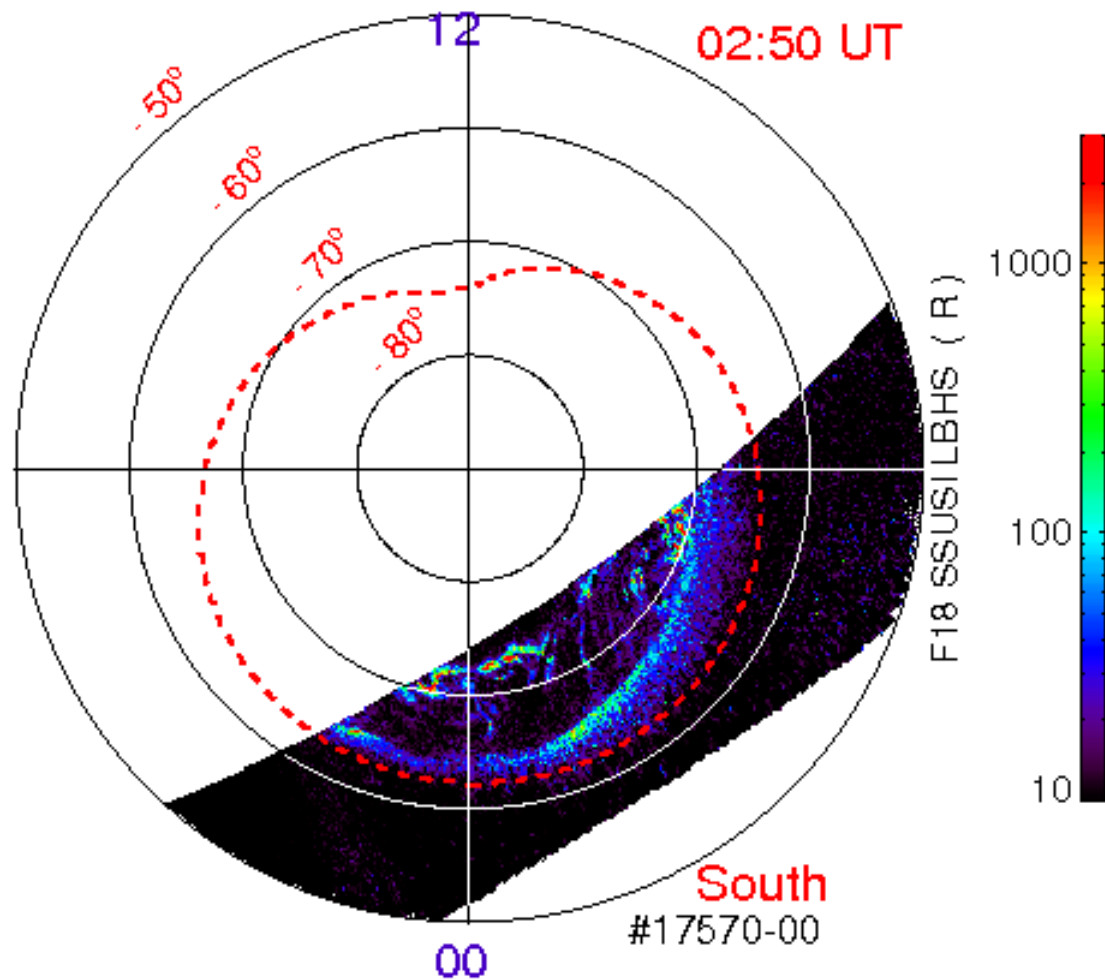


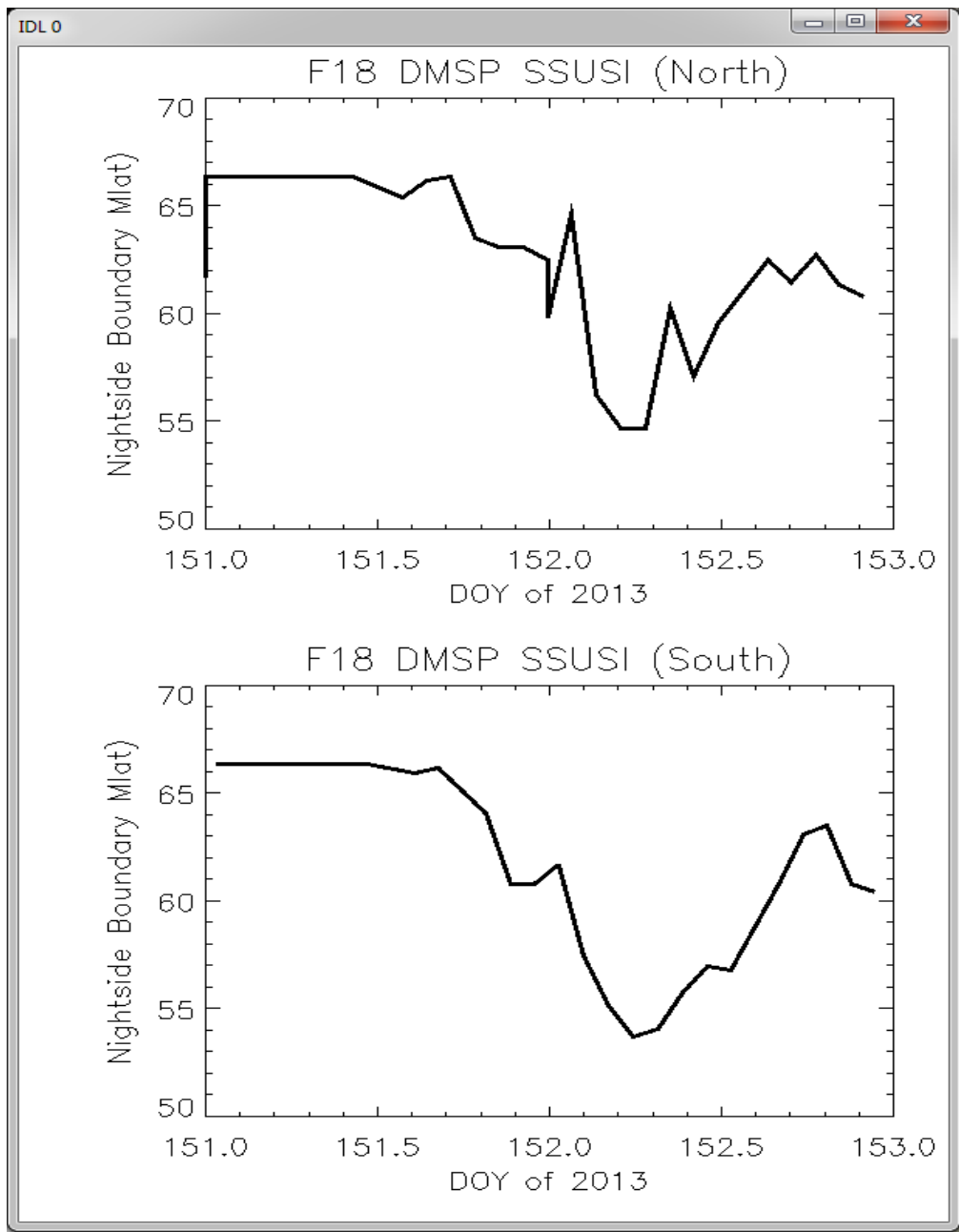


# F18 SSUSI March 16, 2013



# F18 SSUSI March 16, 2013





# Summary

All of the suggested events have been examined

2013-03-17

2013-06-01

2012-10-09

2011-08-06

2010-04-06

2013-03-29

2013-08-27

2010-05-02

2013-06-29