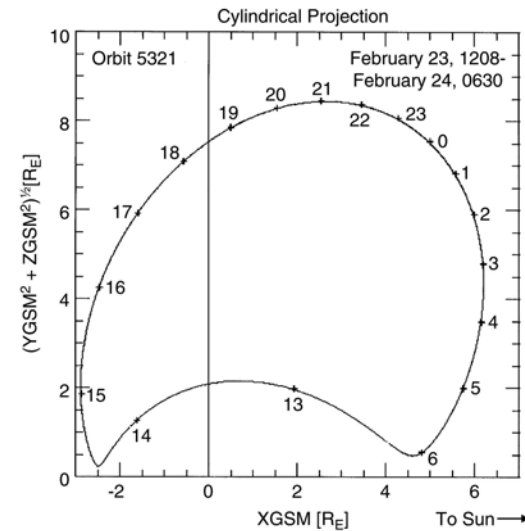
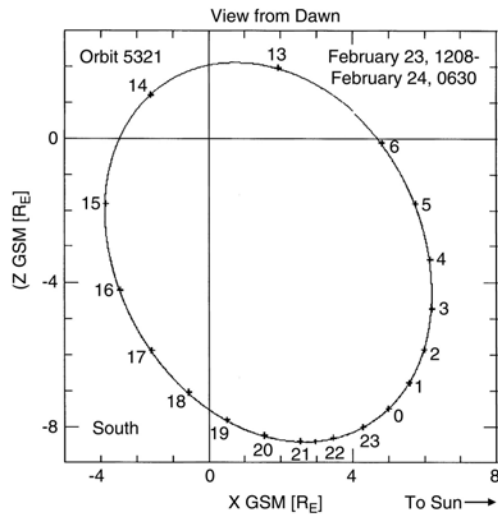
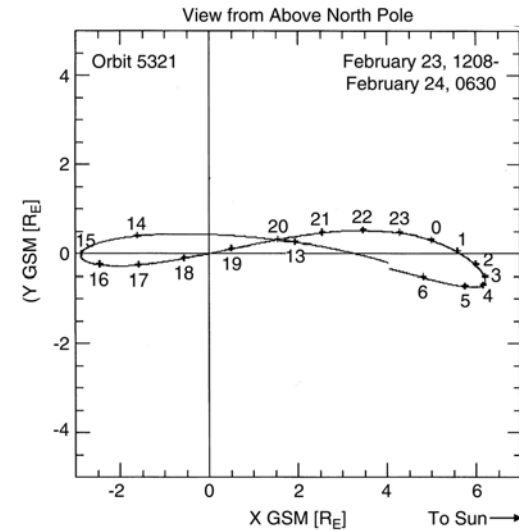
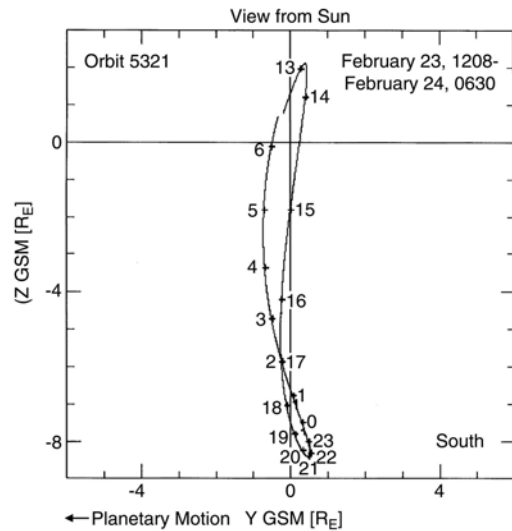


# Polar – THEMIS Collaboration Opportunities

C. T. Russell, Y. S. Ge and  
R. J. Strangeway

- Spacecraft Locations post launch
- Magnetopause campaign?
- Conjugate studies with THEMIS Ground Stations

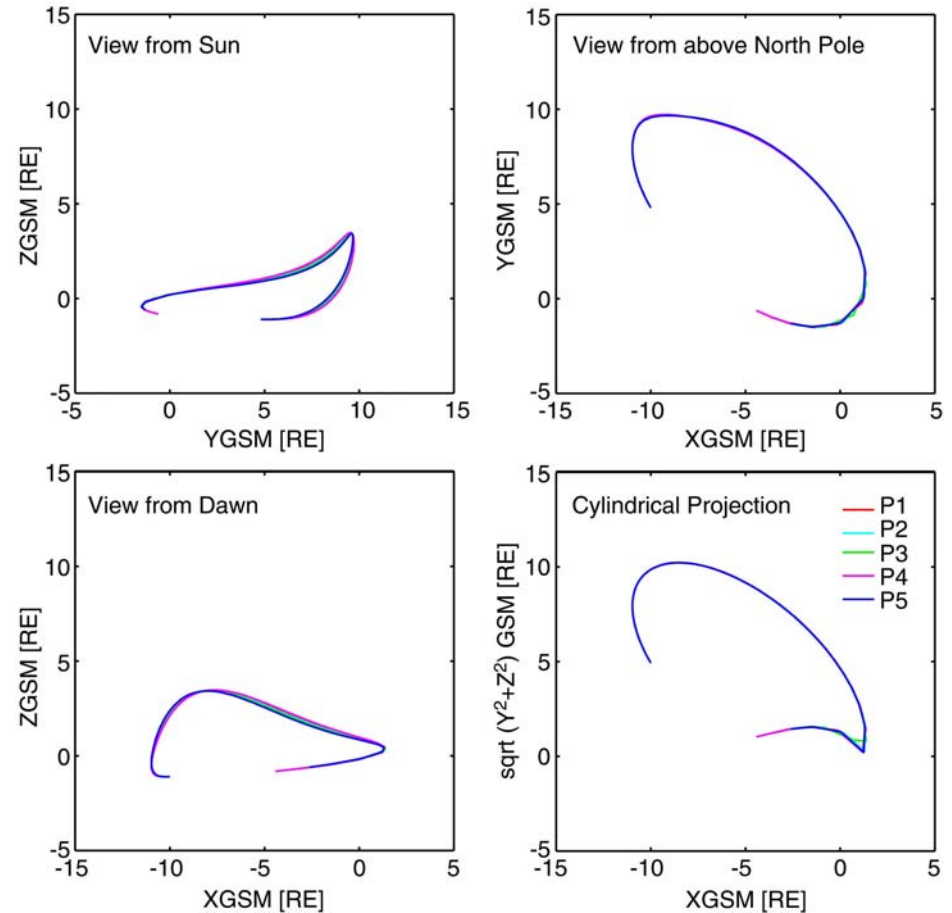
# Polar Orbit at THEMIS Launch



When THEMIS is launched, Polar will be near the noon meridian, probing the southern polar cusp at apogee

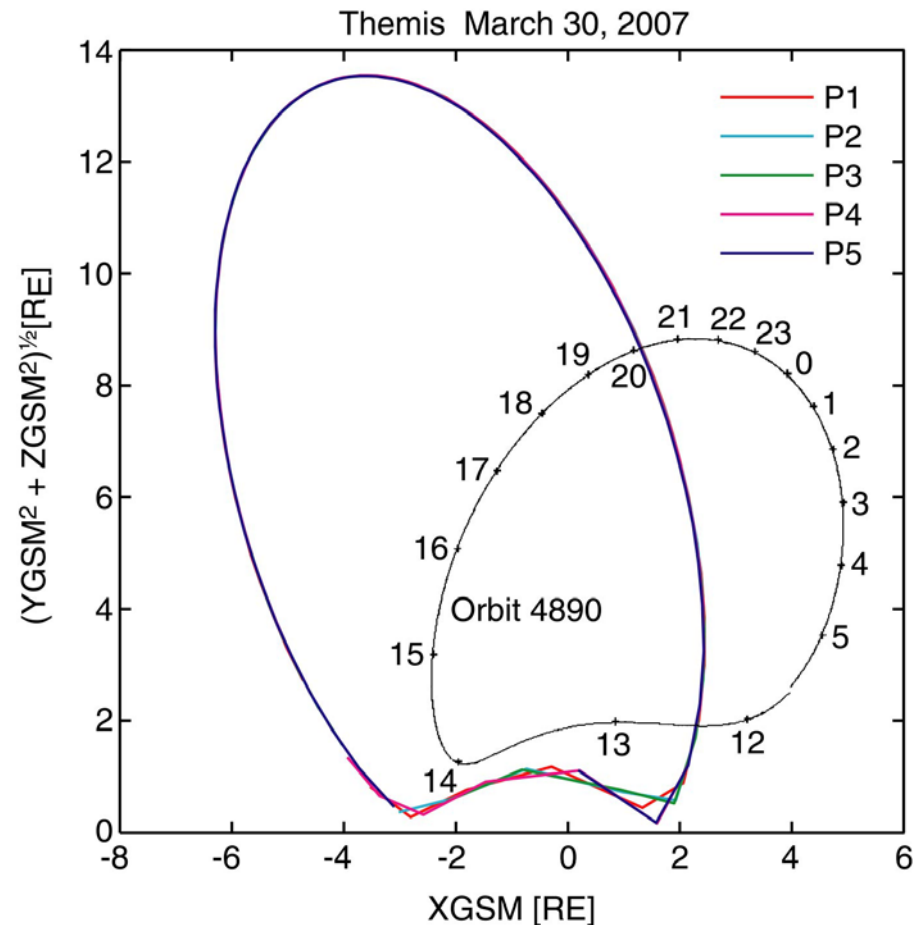
# Initial THEMIS Orbit February 23, 2007

- THEMIS gets launched into a 25 hour period elliptical orbit with apogee about 2100 LT with a low inclination
- The spacecraft will be close together and will stay moderately close for most of the year
- There is some discretion in the separation strategy



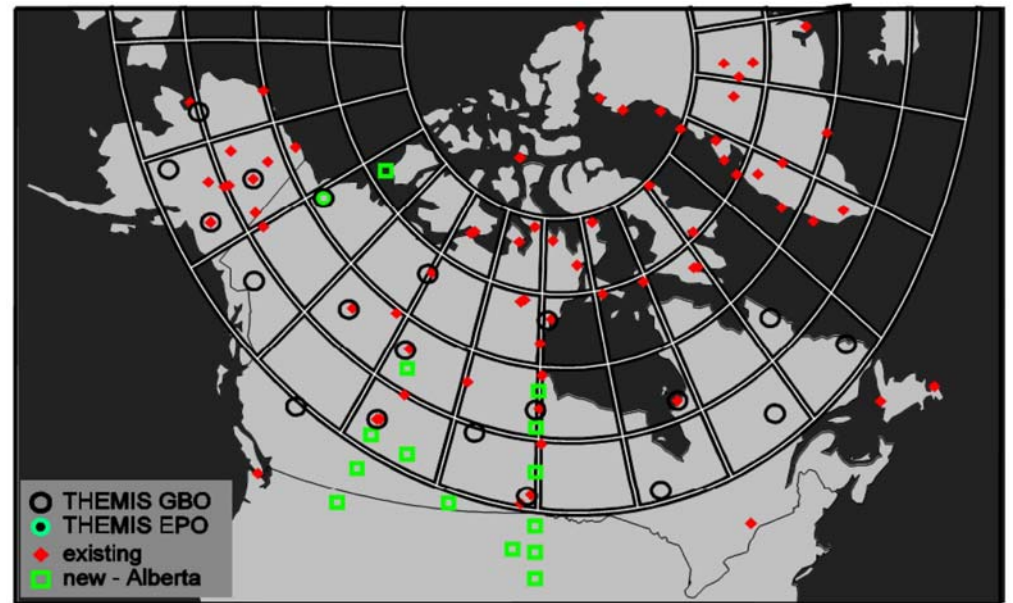
# Possible Magnetopause Campaign

- The best time for Polar to coordinate with THEMIS on the magnetopause is at the end of March when both will be inside the usual location of the magnetopause but roughly parallel to it
- If the dynamic pressure of the solar wind is much higher than usual we could see crossings with both missions but the phasing in the orbit would also be just right
- This is interesting because the crossings would be in quite different parts of the magnetosphere



# Conjugate Studies with THEMIS Ground Stations

- THEMIS has deployed an array of all-sky images and magnetometers across Canada and Alaska
- Polar will be in the northern hemisphere at perigee and at altitudes that have been poorly explored



# Summary

- There are many studies that can be done jointly between THEMIS and Polar
- Most of these will be studies with Polar inside the magnetosphere and THEMIS at or near the magnetopause
- A joint magnetopause campaign is possible if the solar wind cooperates
- A campaign between Polar and the THEMIS ground stations is very promising