

Search for time-dependent fluctuations in cosmic rays spectra with the AMS01 detector

Flux fluctuation frequency vs Geomagnetic indices:

Data taking period: 8/06/98 18h00-> 12/06/98 2h30

AMS Z-axis pointing

- 8/06/98 17h53 UT -> 9/06/98 17h42 UT Zenith
- 9/06/98 17h46 UT -> 9/06/98 21h03 UT 45° to Zenith
- 9/06/98 21h06 UT -> 10/06/98 18h39 UT 20° to Zenith
- 10/06/98 19h49 UT -> 11/06/98 1h27 UT 30° to Zenith
- 11/06/98 1h29 UT -> 12/06/98 2h36 UT 45° to Zenith

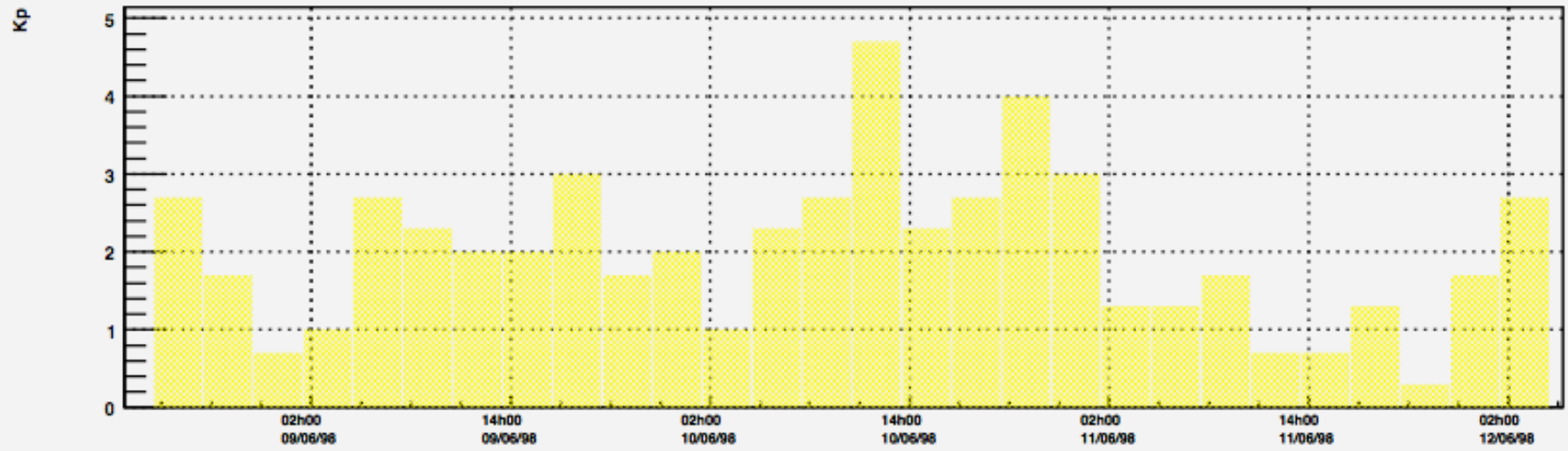
All fluctuations events occurred inside SAA $B < 0.26$ Gauss contour have been excluded

Geomagnetic indices

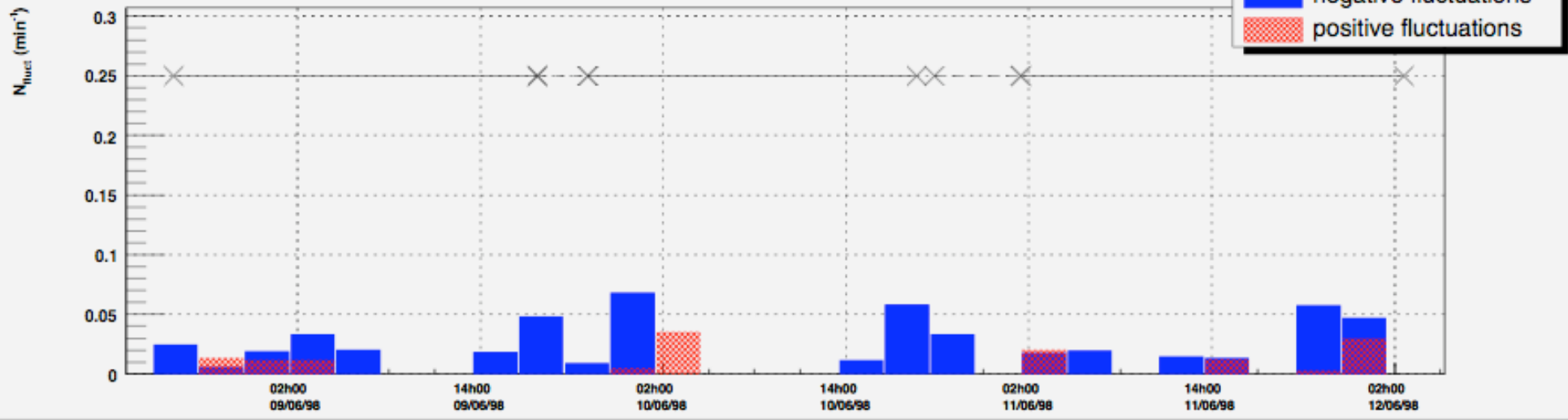
(from ground-based stations)

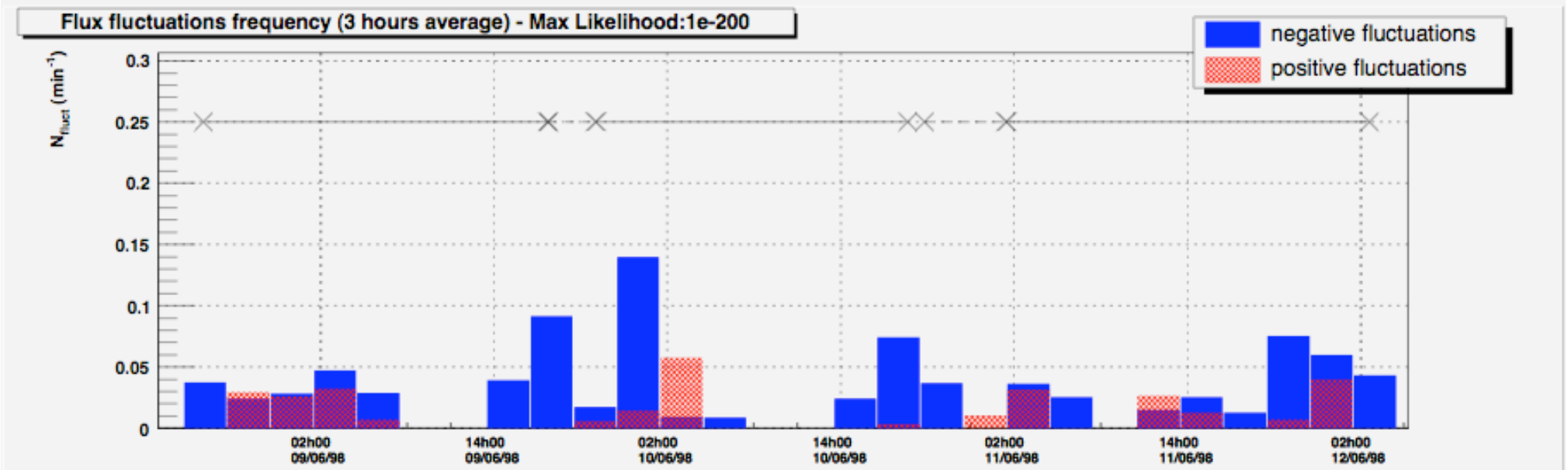
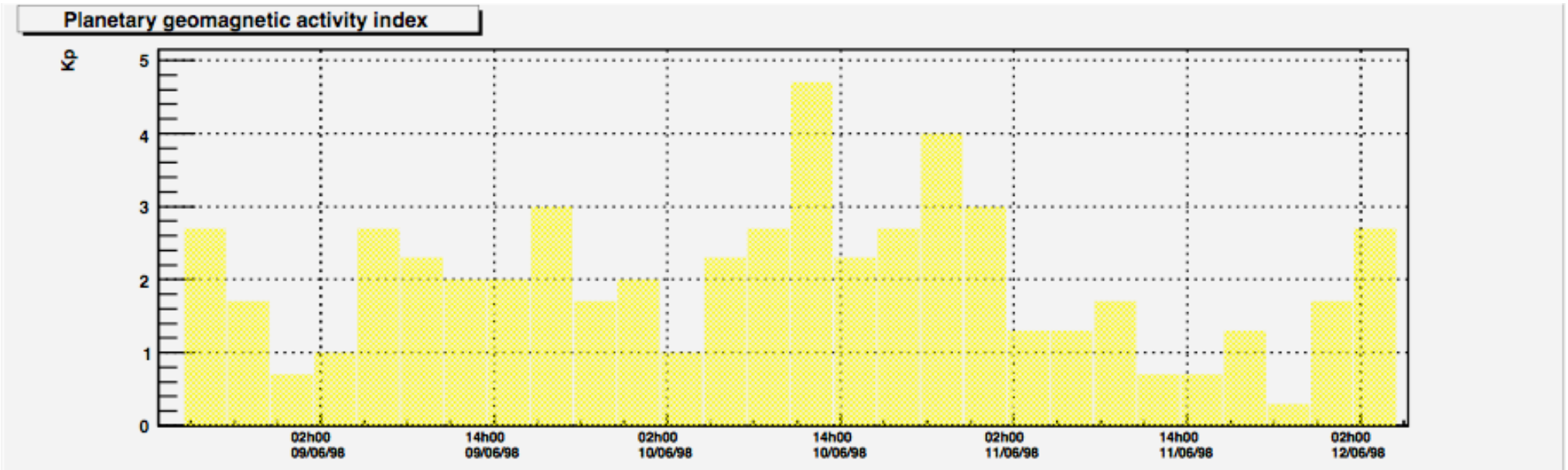
- **AE: auroral electrojet index**
derived from 12 northern-hemisphere auroral-latitude (70°) measures the intensity of substorms expansion phase activity in the magnetosphere
- **Kp: planetary geomagnetic index**
quasi-logarithmic scale of geomagnetic activity ranging from 0 to 9, computed from 13 geomagnetic observatories in subauroral latitudes ($44^\circ - 60^\circ$)
- **Ap: averaged planetary geomagnetic index**
averaged planetary index based on data from a set of Kp stations
- **DST: disturbance Storm Time**
derived from 4 midlatitude stations ($20^\circ - 40^\circ$), characterizes magnetic storm intensity

Planetary geomagnetic activity index

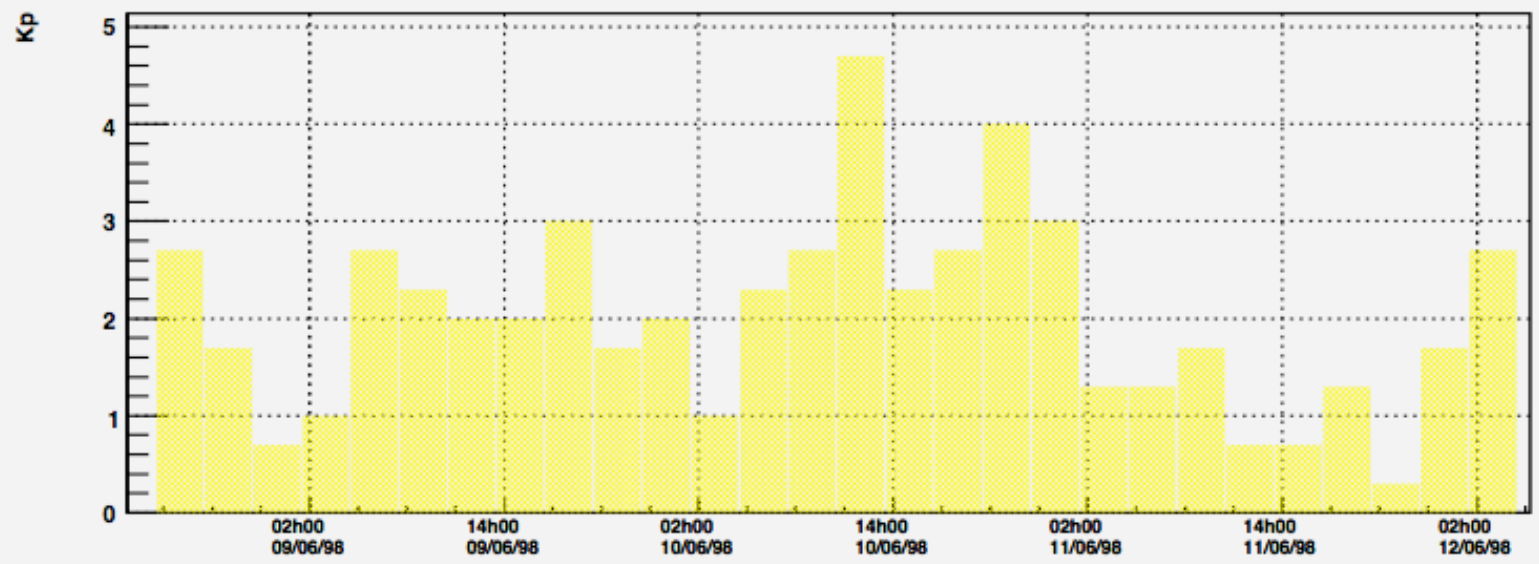


Flux fluctuations frequency (3 hours average) - Max Likelihood:0

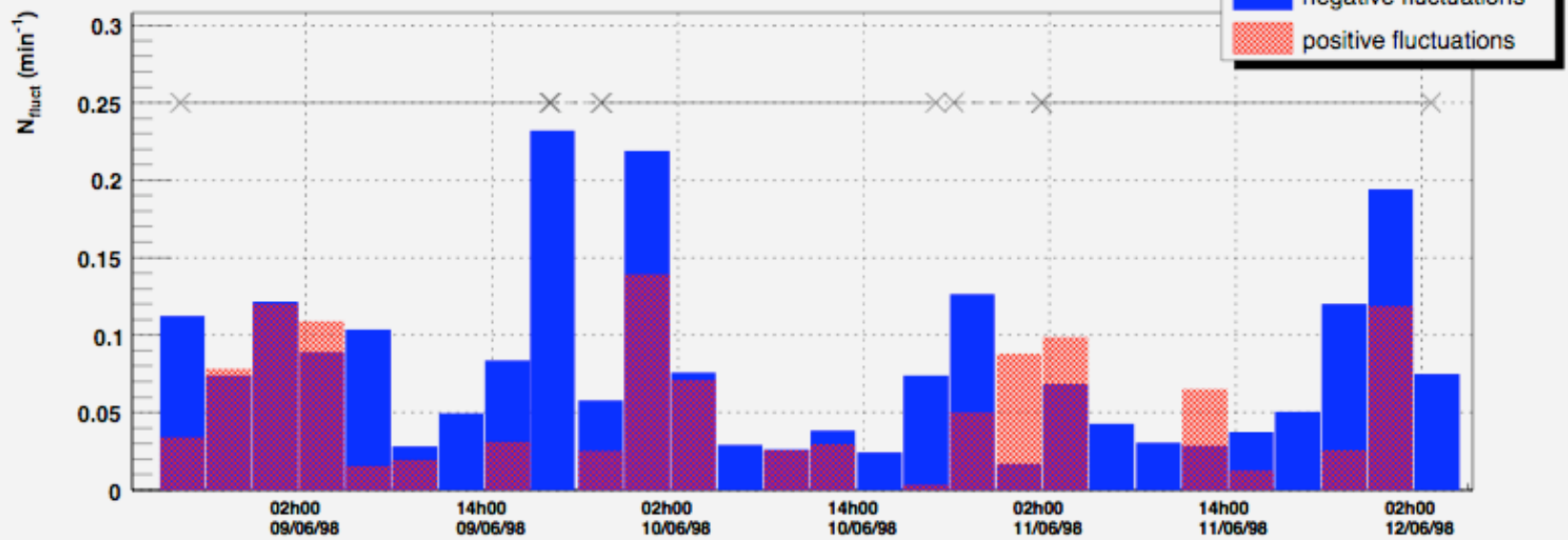


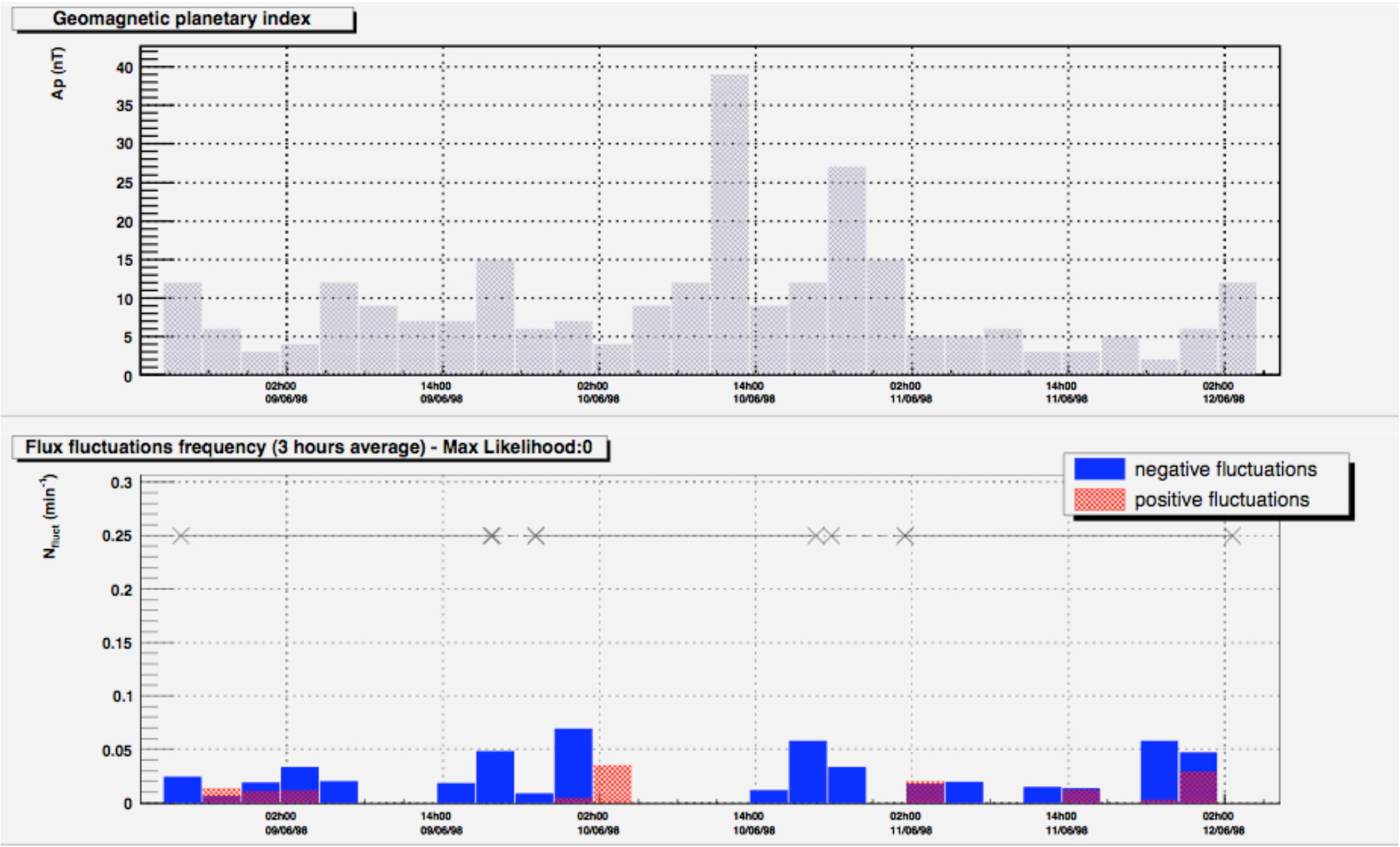


Planetary geomagnetic activity index

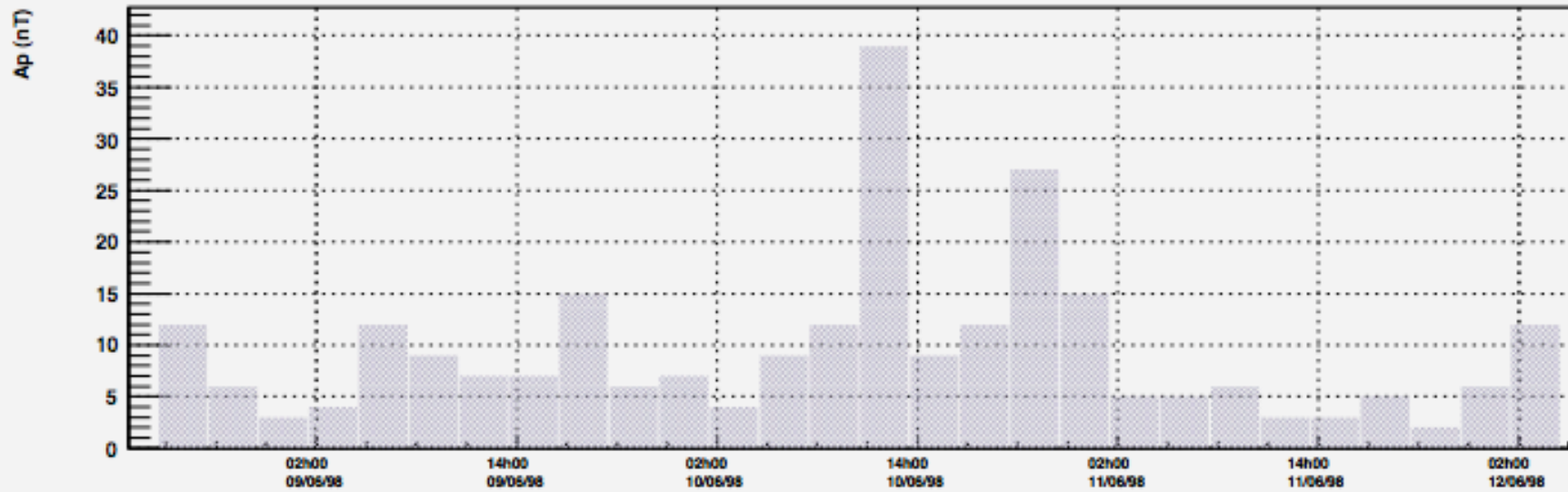


Flux fluctuations frequency (3 hours average)





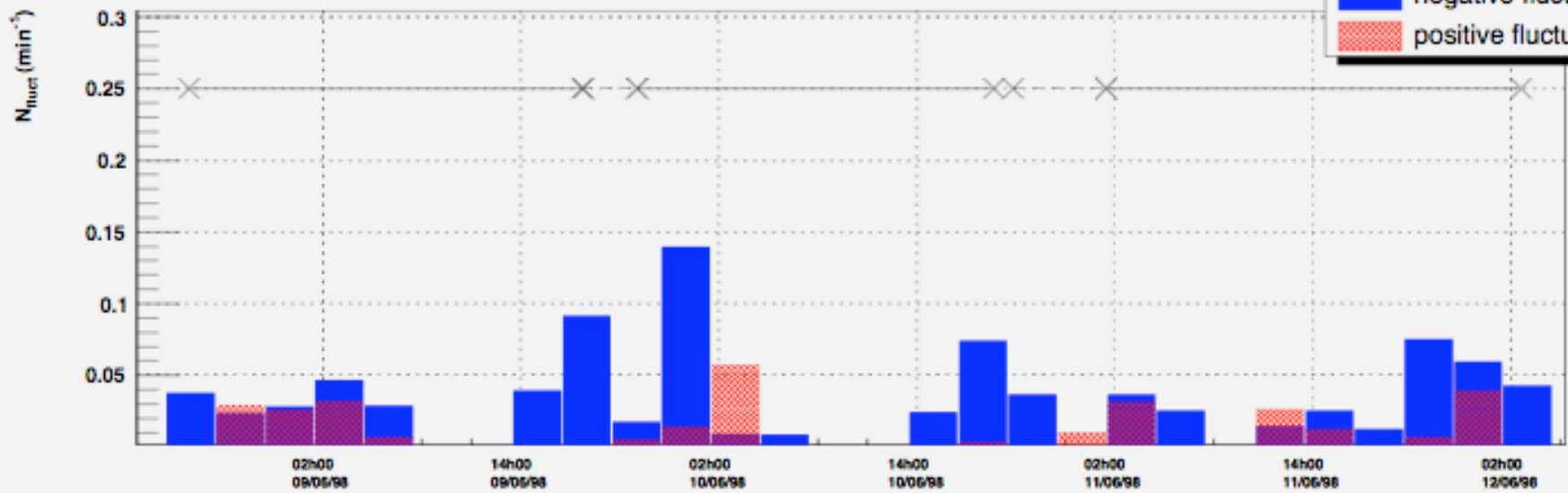
Geomagnetic planetary index



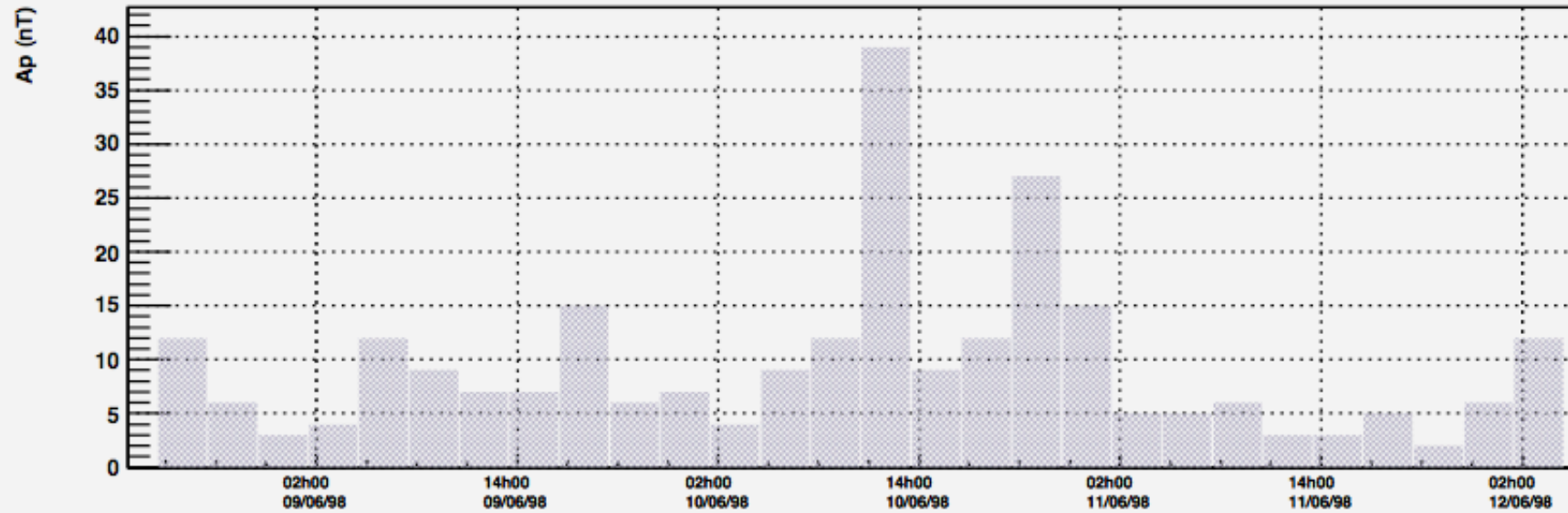
Flux fluctuations frequency (3 hours average)

Max Likelihood: $1e-200$

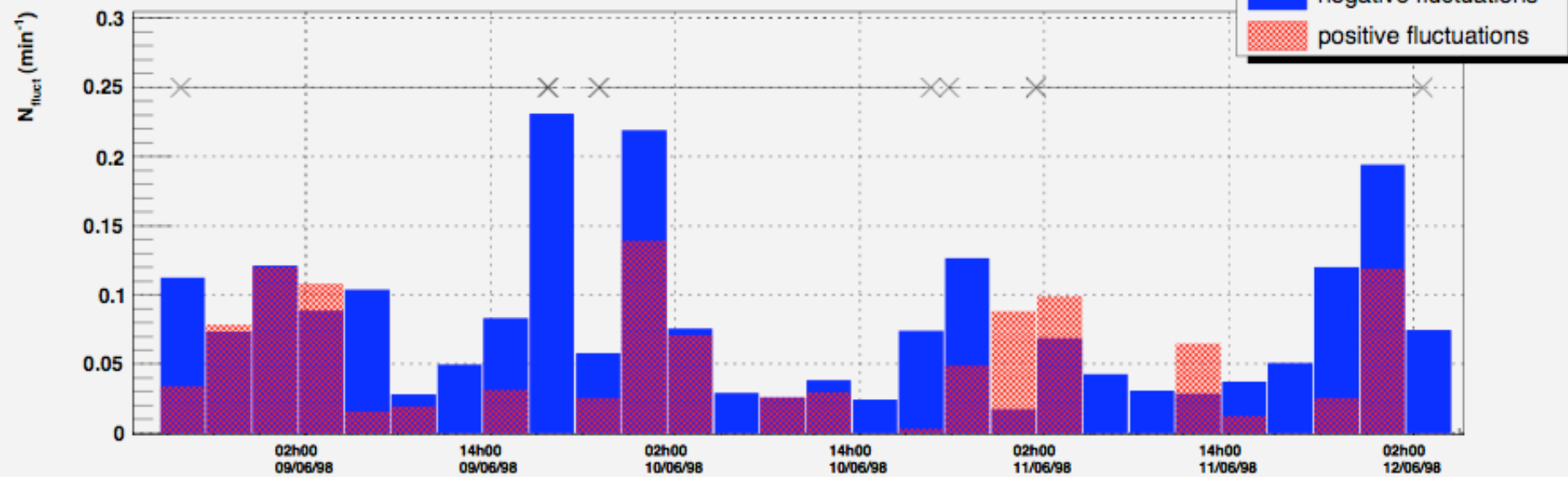
■ negative fluctuations
■ positive fluctuations

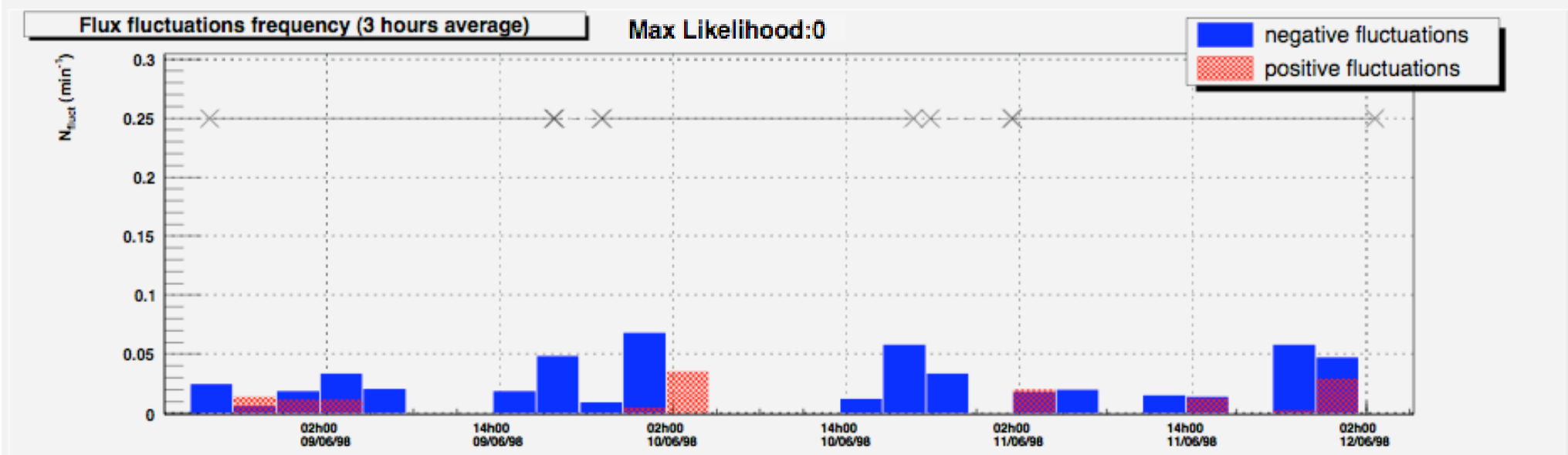
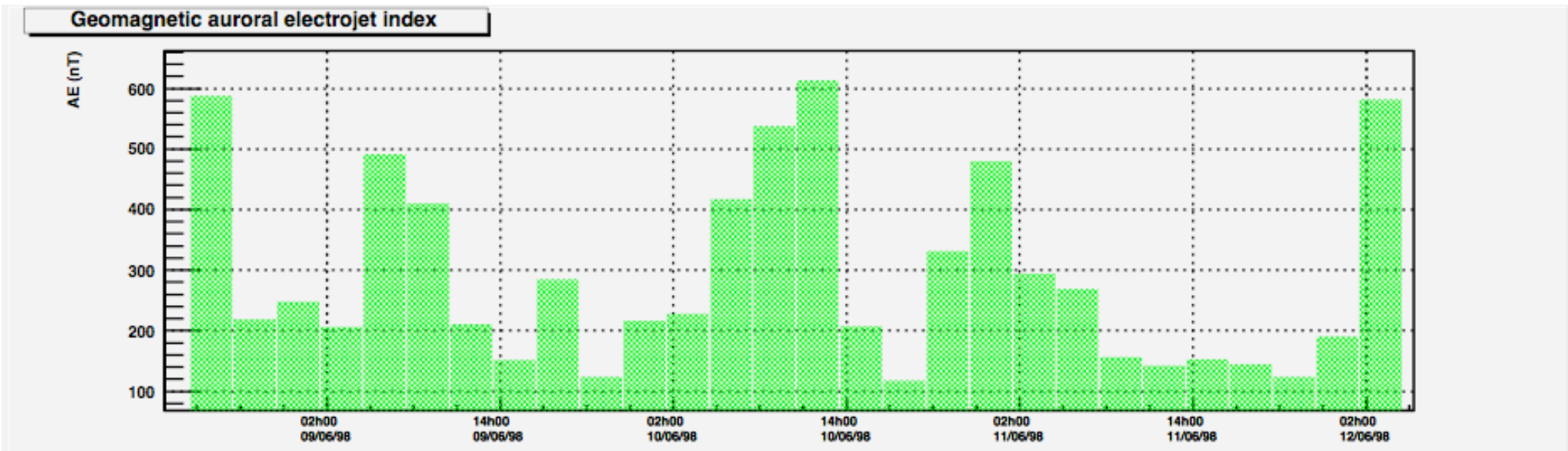


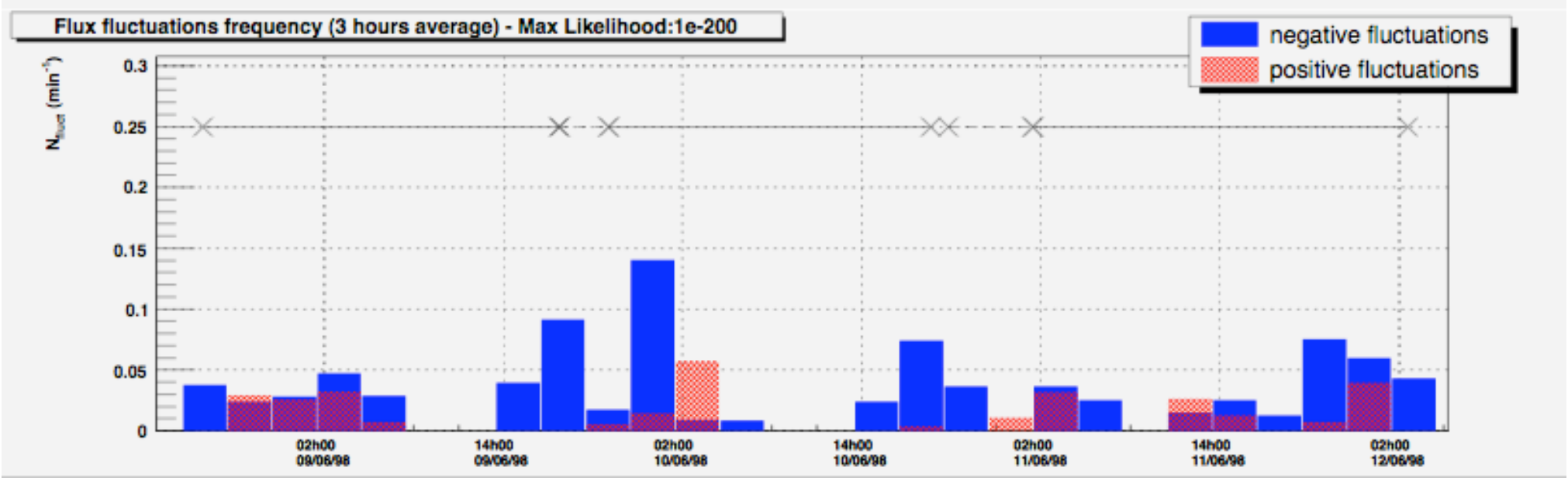
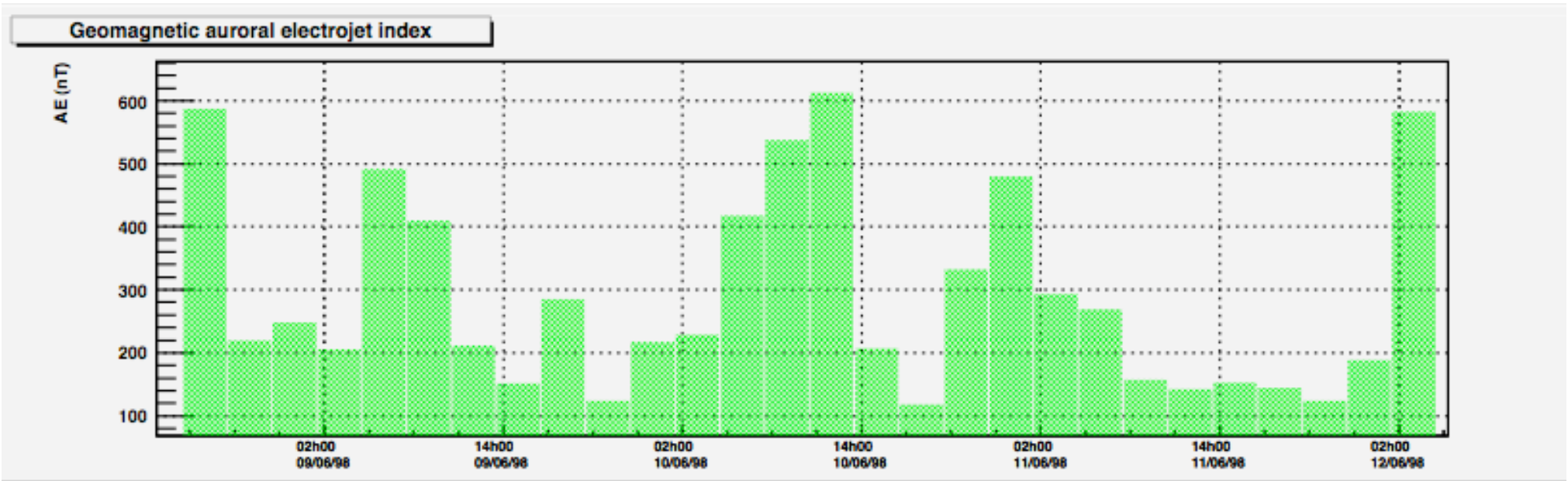
Geomagnetic planetary index



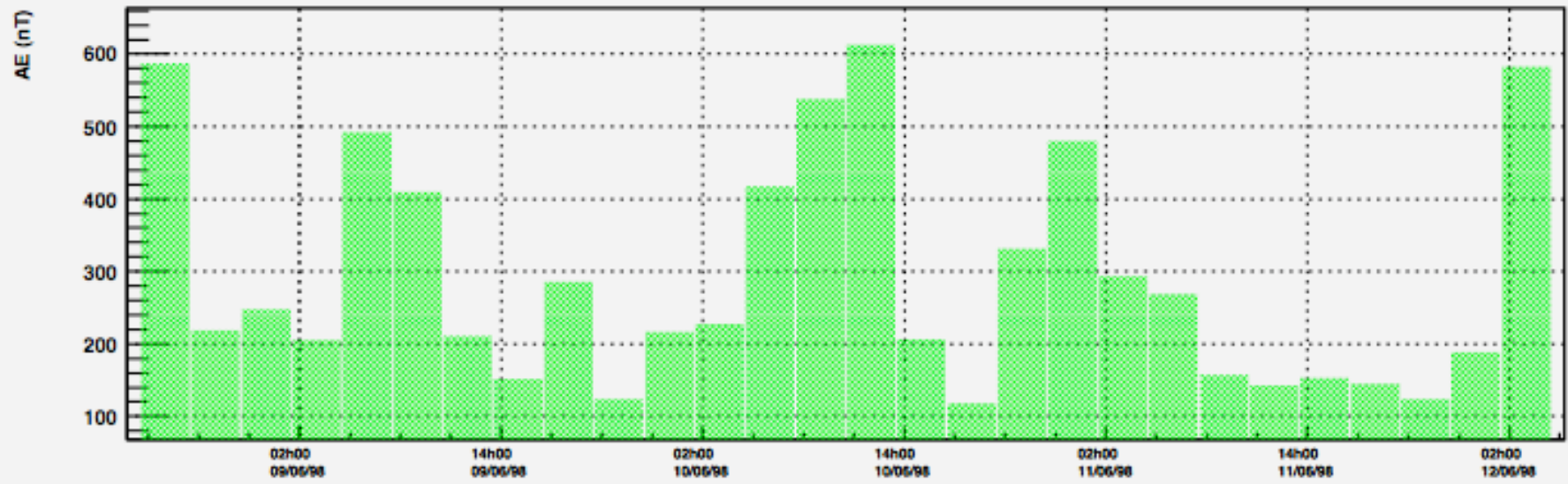
Flux fluctuations frequency (3 hours average)



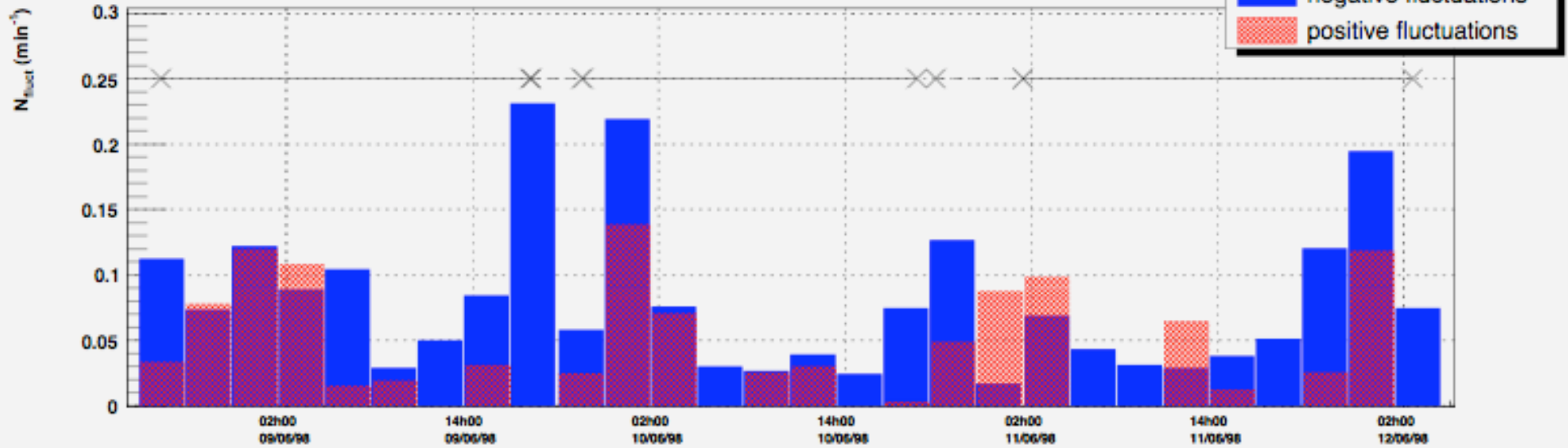




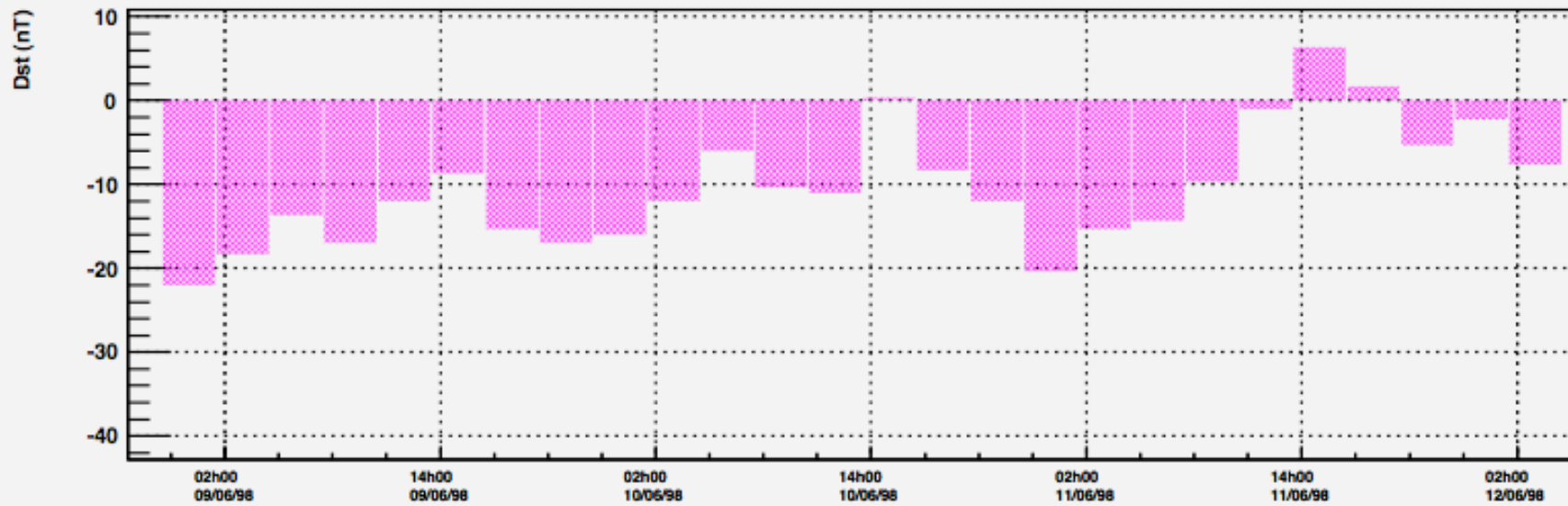
Geomagnetic auroral electrojet index



Flux fluctuations frequency (3 hours average)

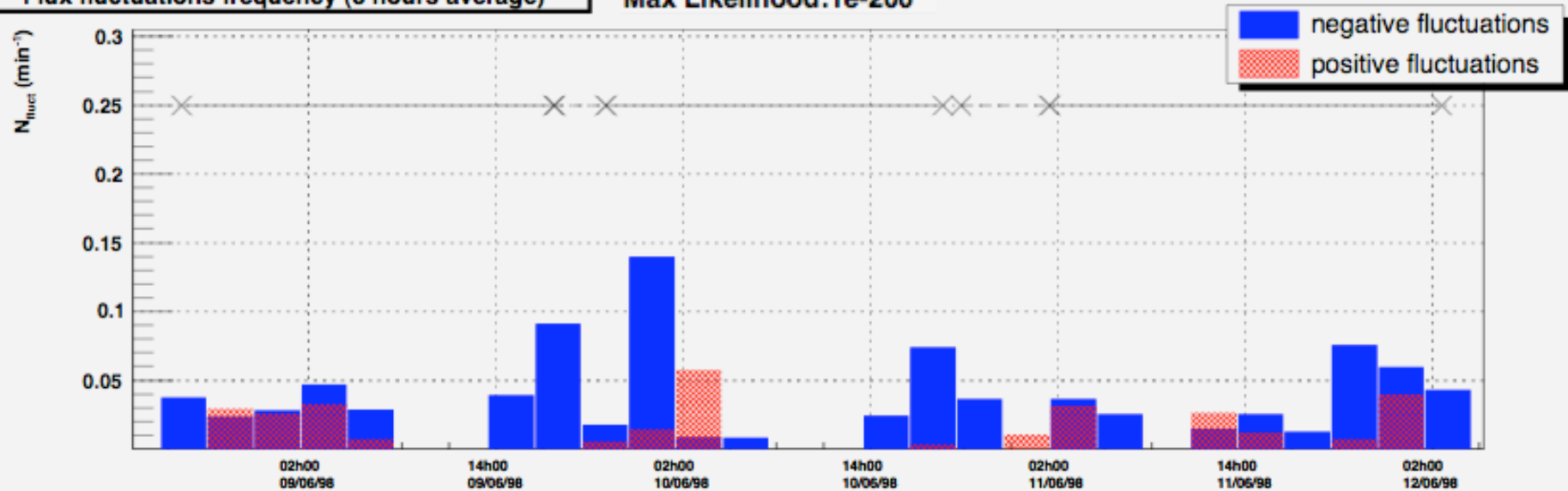


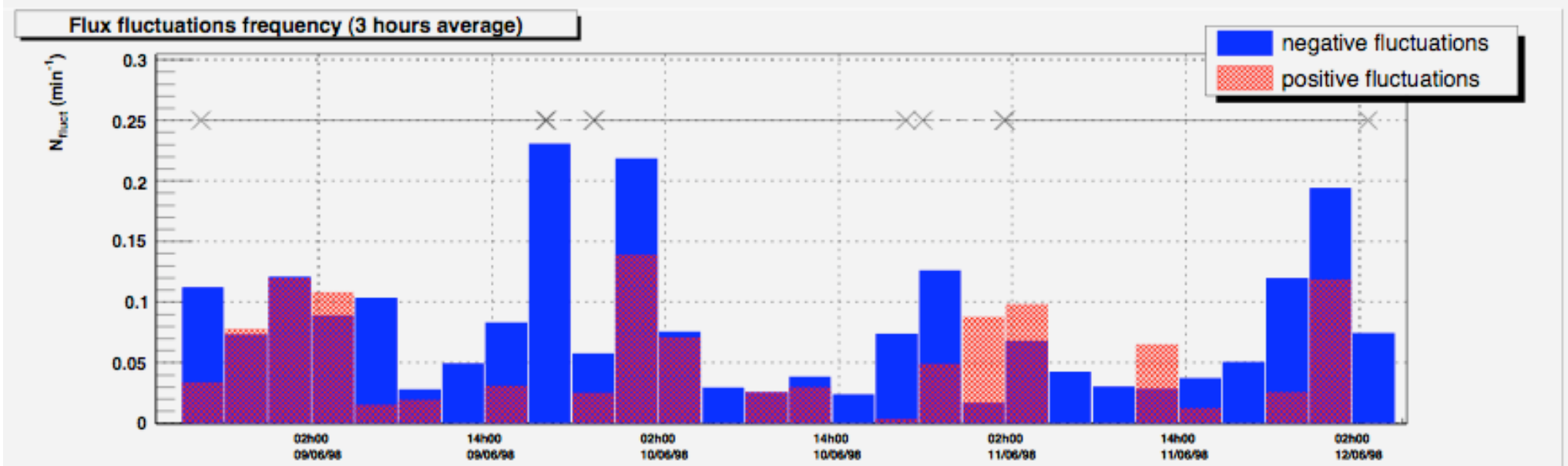
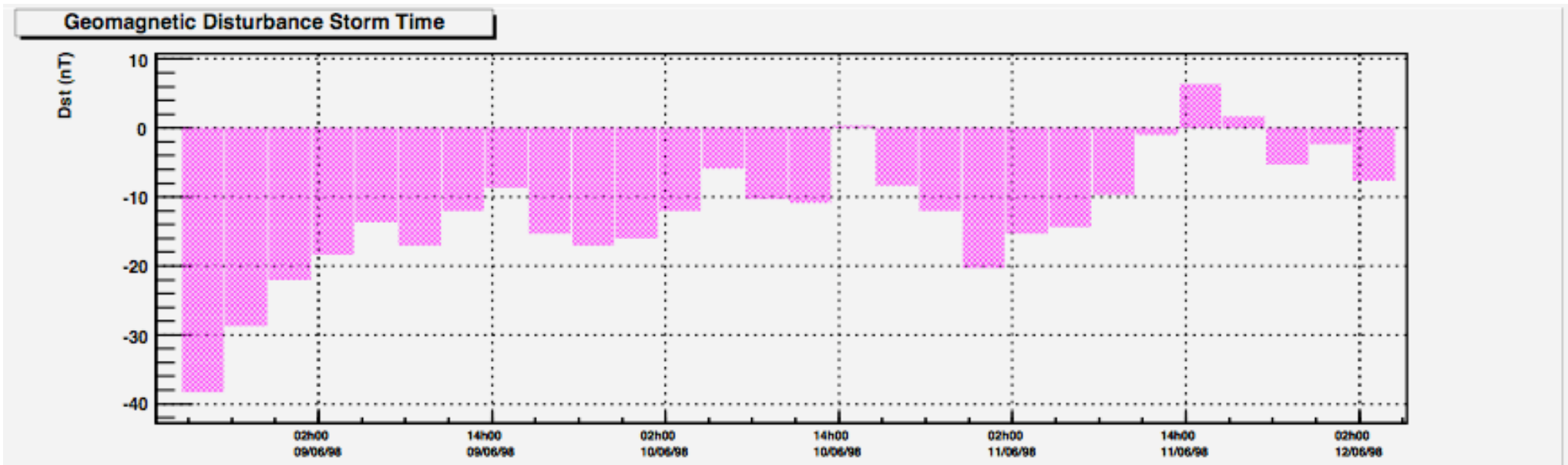
Geomagnetic Disturbance Storm Time



Flux fluctuations frequency (3 hours average)

Max Likelihood: 1e-200





BONUS SLIDE

