IHY Year 2007 National Activities In Turkey

- ***COST 724 and IHY Related Capabilities and Case Studies***
- ***March 29, 2006 Total Solar Eclipse***
- ***Education Tools***
- ***Some Dissemination and Outreach Activities (METU)***
- ***Some IHY Activities (BU)***

Y.TULUNAY [1], E.TULUNAY [2], Z.KOCABAŞ [1], E.ALTUNTAŞ[1], T.YAPICI[1], E.T.ŞENALP[2]

and

A. ÖZGÜÇ[3], T. ATAÇ[3], R. PEKTAŞ[3]

[1]ODTÜ/METU, Dept. of Aerospace Eng.

[2]ODTÜ/METU, Dept. of Electrical and Electronics Eng.

[3]BU, Kandilli Observatory and Earthquake Research Inst.

CAPABILITIES and CASE STUDIES

COST 724

Modeling

Signal Processing Applications

Solar X-Ray and Radio Data Forecast

Ionospheric and Geomagnetic Response to the IMF

Schumann Resonances (SR) Forecast

Total Electron Content Forecast

HF Experiment During Total Solar Eclipse

CAPABILITIES and CASE STUDIES

COST 724

Modeling

METU-NN and Cascade Model, METU-Neuro-Fuzzy Network Model, GETY-Genetic Programming Tool

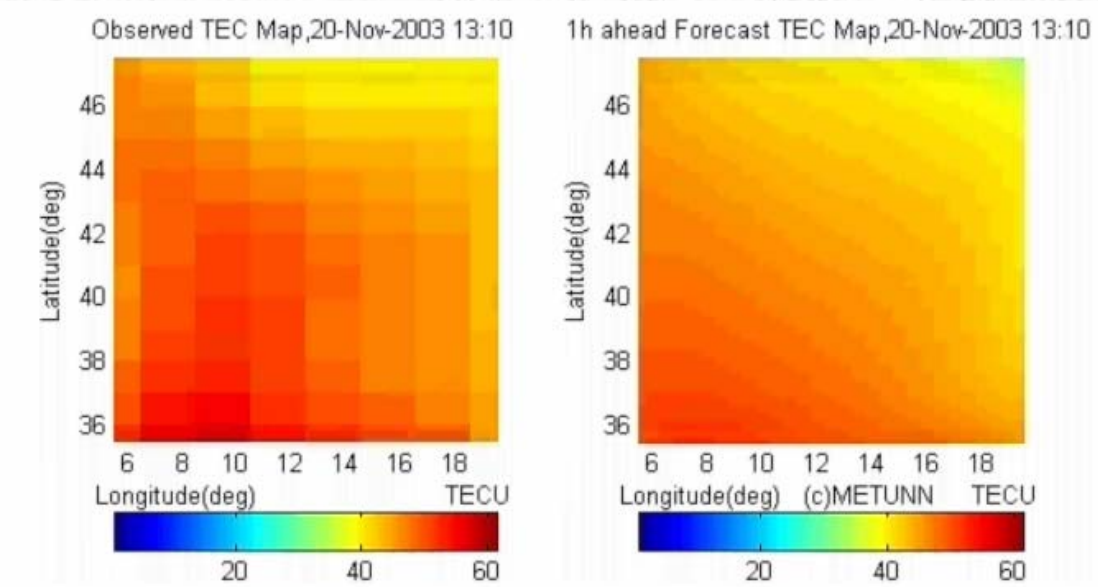


Figure 1. METUNN TEC Mapping

CAPABILITIES and CASE STUDIES

COST 724

Signal Processing Applications

Data organization and filtering; Fast Fourier Transform, Welch's Periodogram Analysis, signal modeling using Autoregressive and autocorrelation methods

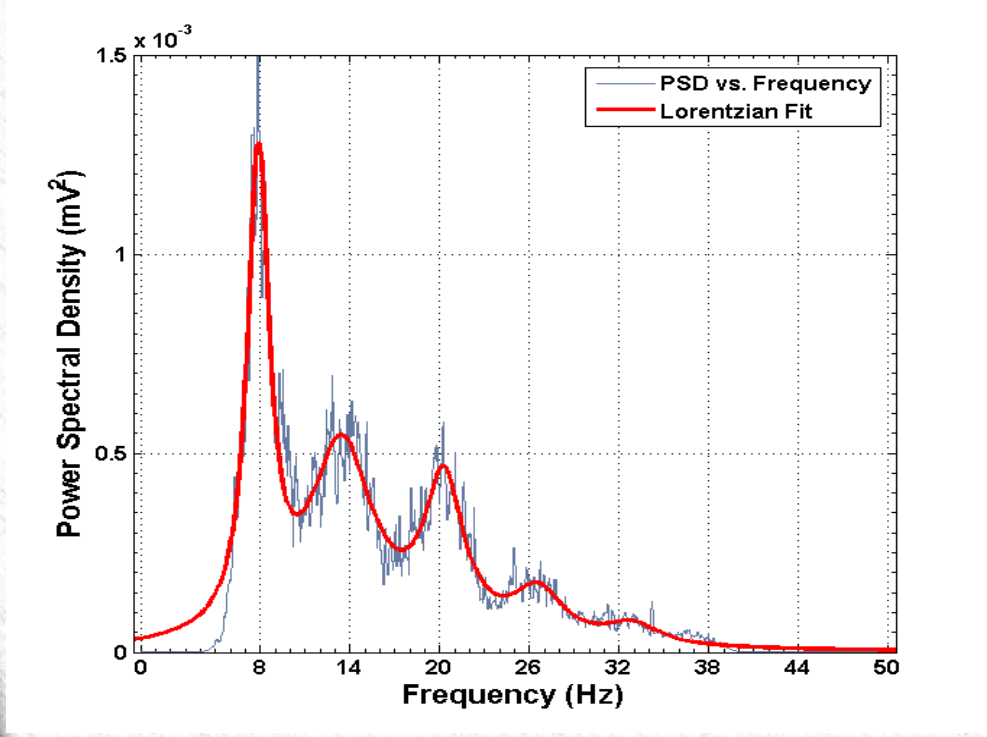


Figure 2. Power spectral density of Schumann Resonances versus frequency. Superimposed is the Lorentzian approximation (bold curve)

CAPABILITIES and CASE STUDIES

COST 724

Solar X-Ray and Radio Data Forecast

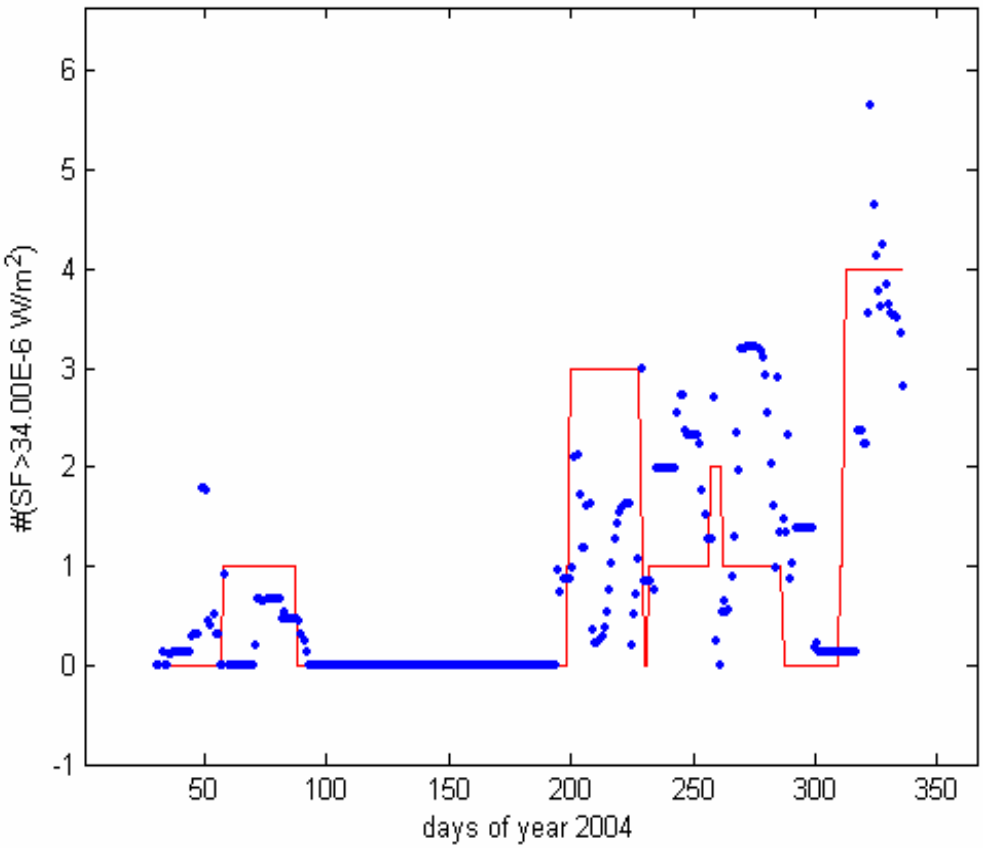


Figure 3. The number of events: observed (red), and forecast (blue) one month in advance between 31 Jan. - 1 Dec. 2004

CAPABILITIES and CASE STUDIES

COST 724

Ionospheric and Geomagnetic Response to the IMF

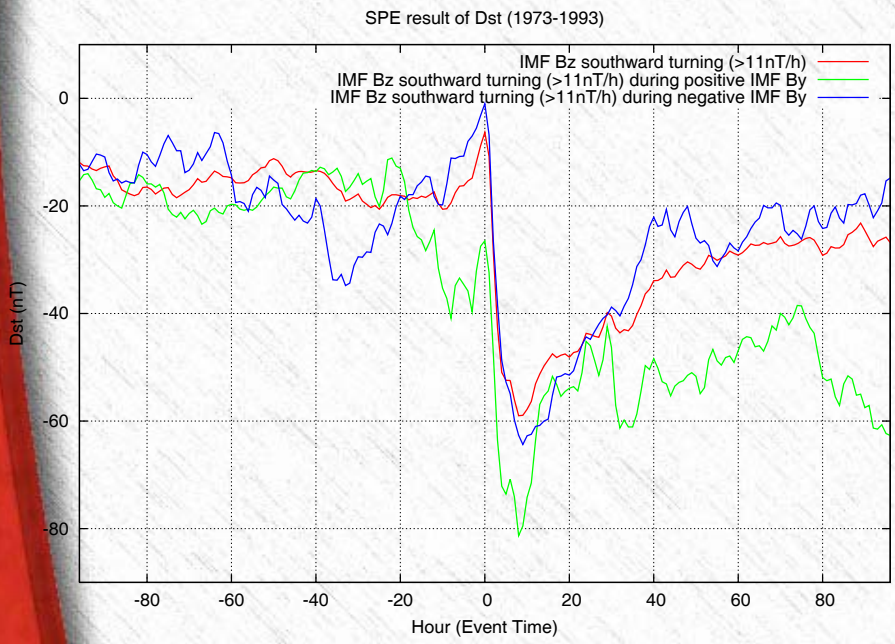


Figure 4. SPE Results of Dst index (1973-1993)

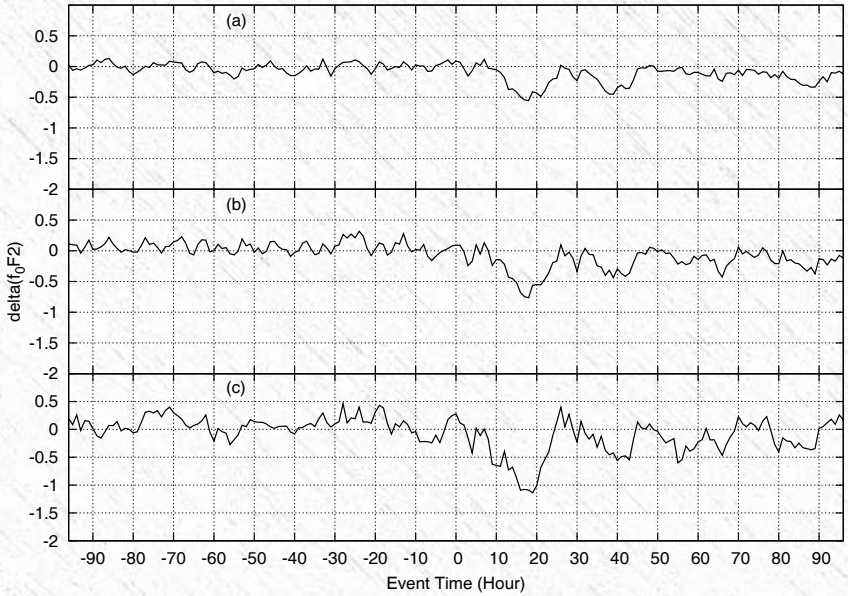


Figure 5. SPE Results of foF2 values Arkhangelsk (1973-1993)

CAPABILITIES and CASE STUDIES

COST 724

Schumann Resonances (SR) Forecast

8, 14, 20, 26, 32 Hz SR Characteristics Diurnal Variations

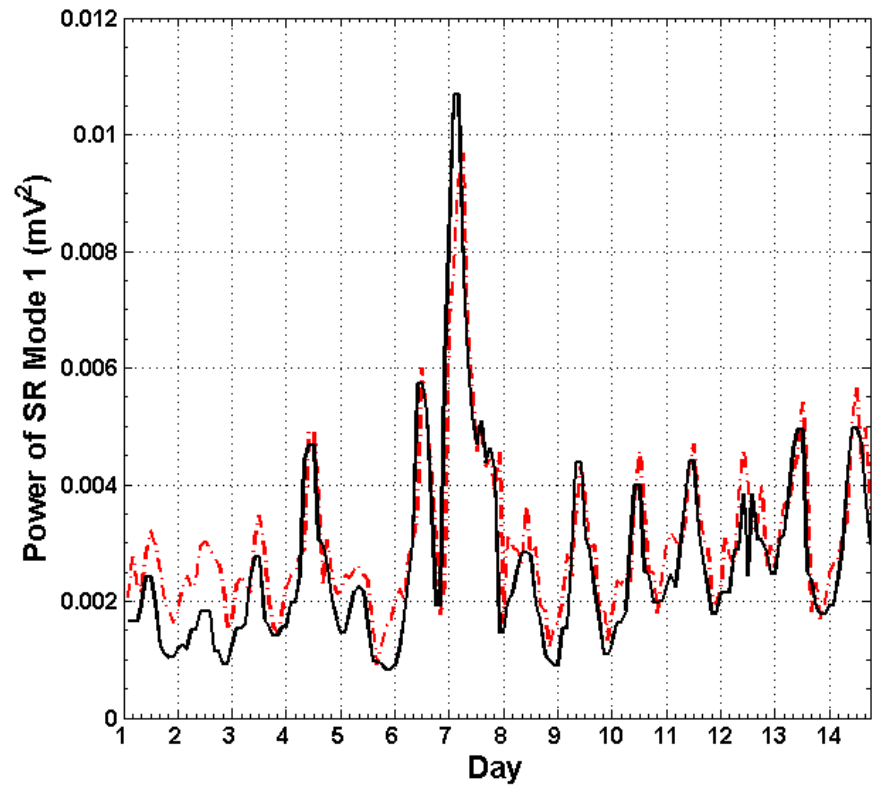


Figure 6. Observed (dashed) and forecast (solid) SR values in November, December 2004

CAPABILITIES and CASE STUDIES

COST 724

Total Electron Content Forecast

Forecast of TEC values up to 24 hours in advance with METU-NN

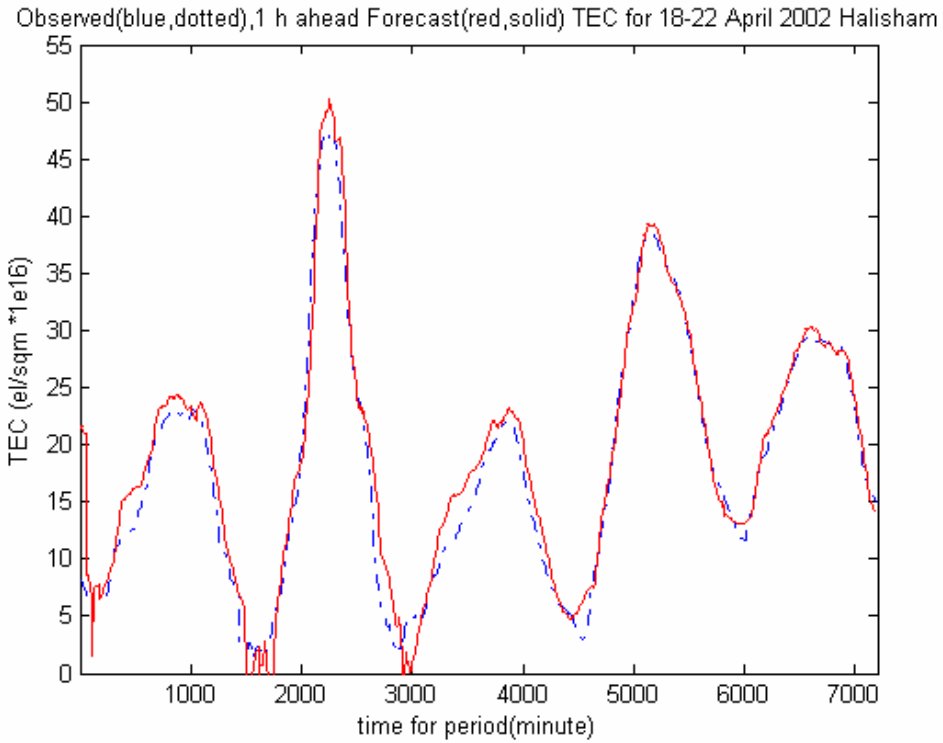


Figure 7. Observed GPS TEC values (blue, dotted) and 1-hour ahead Forecast TEC values (red, solid) for 29-31 October 2003 for Hailsham

CAPABILITIES and CASE STUDIES

COST 724

HF Experiment during Total Solar Eclipse

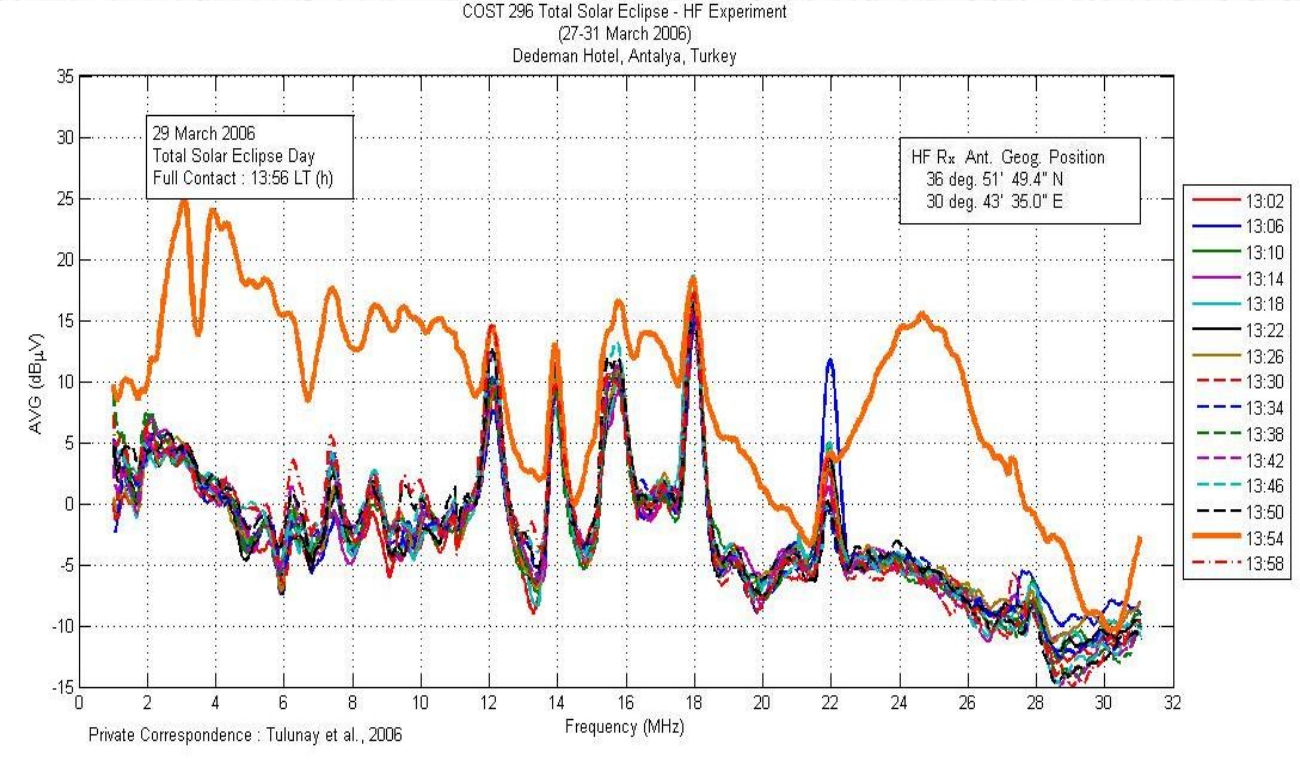


Figure 8: The atmospheric noise level on the time of the total eclipse

SOME RELEVANT NEAR-EARTH SPACE COURSES at METU

Deptartment of Aerospace Eng.

(http://www.ae.metu.edu.tr/)

- AE453 Introduction to Atmospheric Physics I
- AE454 Introduction to Atmospheric Physics II
- AE551 Introduction to Space Sciences
- AE552 Selected Topics on Space Applications: Microgravity
- AE554 Applied Orbital Mechanics

Dept. of Electrical and Electronics Eng.

(http://www.eee.metu.edu.tr/)

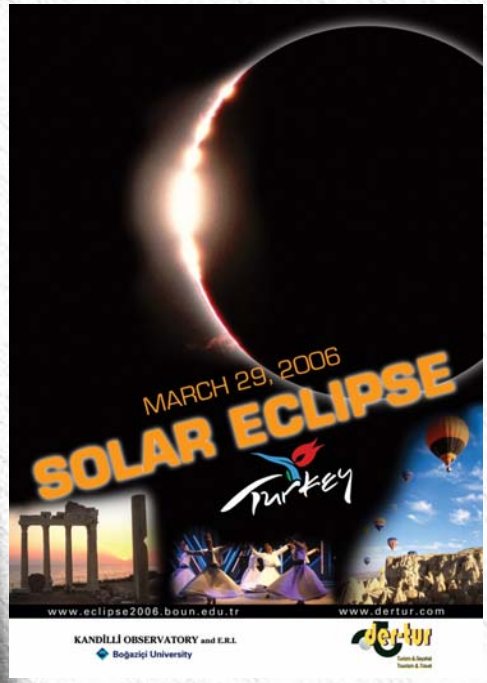
- EE 503 Signal Analysis and Processing
- EE 543 Neurocomputers
- EE 553 Optimization
- EE 557 Estimation Theory

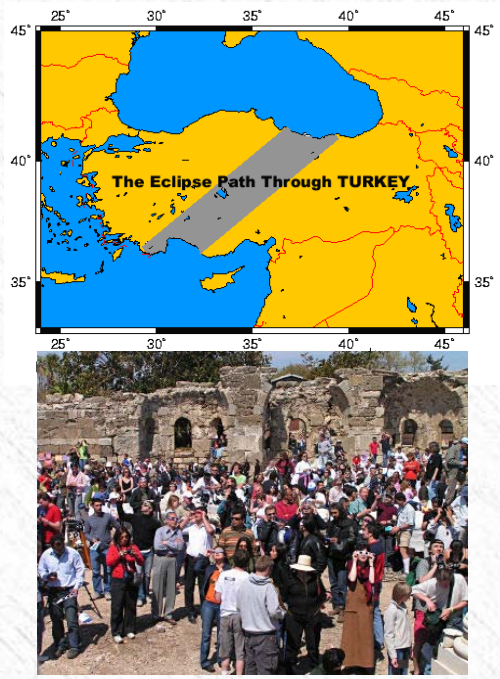
SOME DISSEMINATION AND OUTREACH ACTIVITIES

Cansu Sezgin, Age 11;
50. Yıl İzzet Baysal İ.O., 5th Year; in Bolu, Turkey

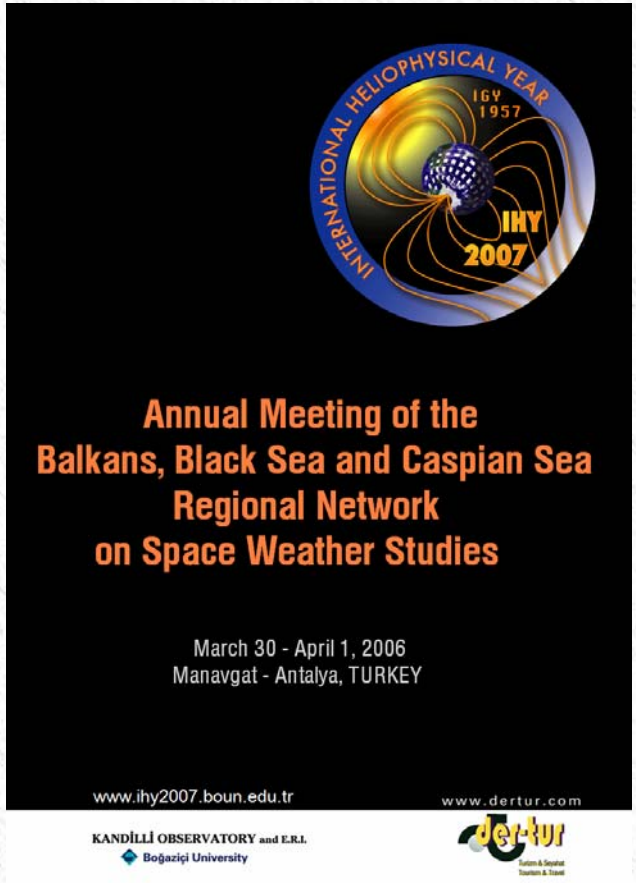
MARCH 29, 2006 TOTAL SOLAR ECLIPSE

More than one million Sun glasses were distributed along the totality path.



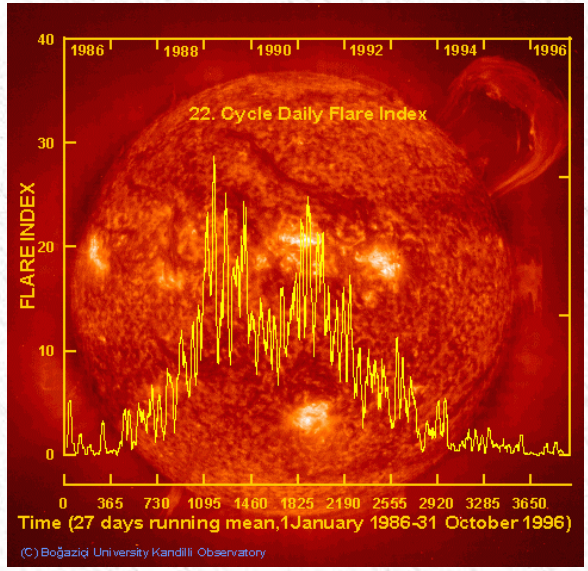


SOME IHY ACTIVITIES at BU



"Importance of Astronomy in Science"

A symposium for science teachers. (Organized by Ministry of Education and TUBITAK National Observatory)



Since 1976 Flare Index is computed and disseminated for public use.

http://www.koeri.boun.edu.tr/astronomy/findex.html (*Kandilli Observatory)*

Twenty five scientists from six foreign countries (Azerbaijan, India, Bulgaria, Slovakia, Japan, Ukrain and Turkey) made experiments during the eclipse. And many scientists from six Turkish universities joined to the experiments.

• For commemorative coins please visit
http://www.darphane.gov.tr/dizayn-ehatirapara.htm

• For commemoration stamps please visit
http://www.ptt.gov.tr/tr/pul/show/html/06-3.html

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