

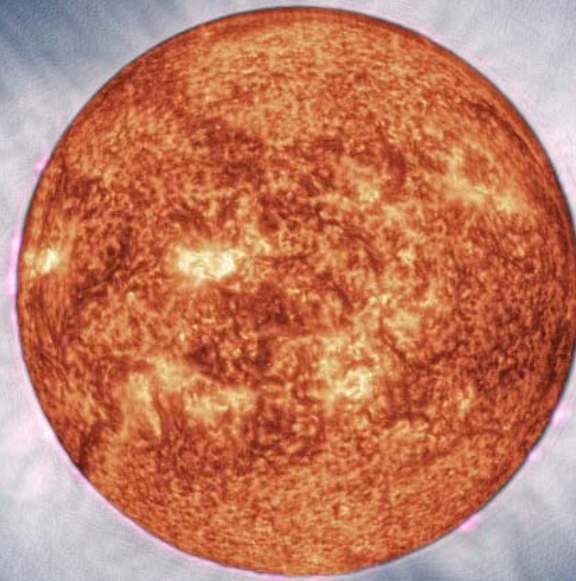
SLOVAKIA IHY 2007 PROGRAM - Science



Vojtech Rušin, Astronomical Institute,
Slovak Academy of Sciences, Tatranská
Lomnica, Slovakia

and

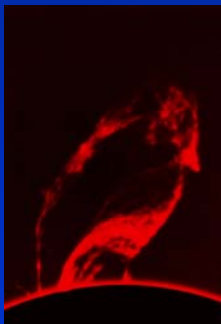
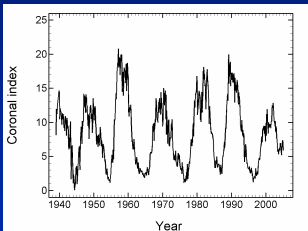
Karel Kudela, Institute of Experimental
Physics, Slovak Academy of Sciences,
Košice, Slovakia



Sun – the nearest star – central body of the heliosphere

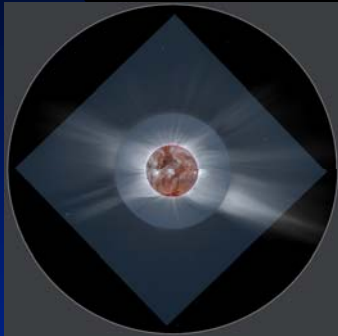
(A brief report of Slovakia IHY 2007 preliminary scientific program)

Astronomical Institute, Slovak Academy of Sciences

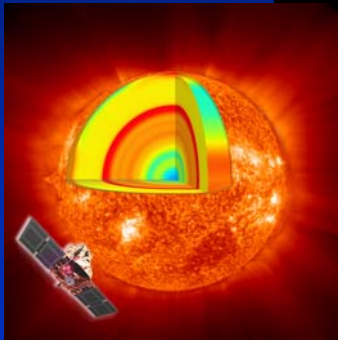


- **Solar physics department:**
- **Patrol measurement of the green (530.3 nm, FeXIV) and red (637.4 nm, FeX) coronal emission lines, short-term oscillations in these lines. It is done at Lomnický štít coronal station, 2634 m above sea level with a 20 cm coronagraph with spectrograph**
- **Monochromatic observations in the green corona will start in the end of 2007**
- **Main target: long-term variation of the green corona, time-latitude distribution of the corona brightness, global circulations, magnetic fields, solar cycles**
- **Prominences in H-alfa 0.5 nm filter: time-litudinal observations, CME's onset, magnetic fields**

Continued



- Eclipse observation of the solar corona



- Investigation of the solar chromosphere, transition region and corona using satellites (SoHO, TRACE, Hinode) and ground-based telescopes (DOT, SST, VTT)
- Dynamics and energy transport in the upper solar atmosphere – observational verification of different heating mechanisms

Institute of Experimental Physics of the SAS, Košice

- IEP SAS is running cosmic ray neutron monitor (NM) measurements at Lomnický Štít. The observations of cosmic rays in High Tatras started 50 years ago in connection with IGY
- The institute participates also in several satellite measurements of energetic particles.
- IEP SAS participates also in MUSTANG project
- (see <http://www.mustang.uni-greifswald.de>)
- Cosmic rays: useful tool to study solar flares, CME's, solar cycle variability, space weather effect, etc.

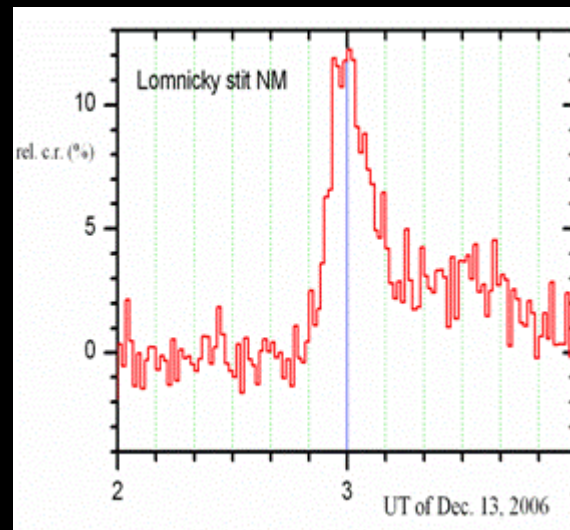
Current status of cosmic ray measurements:

8NM64 neutron monitor (NM) measures continuously cosmic rays at Lomnický Štít with high statistical accuracy (average count rate $\sim 440 \text{ s}^{-1}$). This allows *to detect small variations of primary cosmic rays on the ground*.



Data available in real time at
<http://neutronmonitor.ta3.sk>

More informations at:
<http://space.saske.sk>



Recent GLE 70:
acceleration to $>4 \text{ GV}$
indicated by Lomnický
Štít NM with 1min
resolution.

Other solar observatories in Slovakia

- Comenius University at Bratislava (observations of flares and filaments at Modra/Piesky Observatory)
- Slovak central Observatory, Hurbanovo (high spectral resolutions of photosphere and chromosphere, prominences, flares, sunspots)
- Observatory Rimanská Sobota (prominences, sunspots)
- Observatory Prešov (sunspots)

Meetings (planned)

- IEP SAS: 50 years of cosmic ray measurements and 30 years of energetic particle measurements on satellites seminar (Košice/T.Lomnica September 12-13, 2007)
- IEP SAS with other institutions in Slovakia: European Cosmic Ray Symposium, September 12-15, 2008 in Košice
- Sun/Earth relations, May 2008, program under discussion
- Many local workshops and meetings, especially for public

Thank you for your attention

- Presented at IHY Science Meeting, Vienna, February 20, 2007
- More IHY Slovakia at <http://ihy/saske.sk>

