SOLAR PHYSICS IN SLOVAK REPUBLIC - 1998

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Solar research in Slovak Republic is carried out at two following institutions:
(1) Astronomical Institute of the Slovak Academy of Sciences (AISAS), Tatranská Lomnica
(2) Slovak Central Observatory (SCO), Hurbanovo.

1. Tatranská Lomnica

Changes in present staff: 13 permanent positions = 7 astronomers (Jan Rybák defended his Ph.D in 1998) + 2 engineers + 4 technicians. One new Ph.D. student and 1 diploma work.
The fundamental instruments are:
- Double coronagraph (DC) at Lomnický Štít Observatory.
- Horizontal Solar Telescope with Spectrograph (HSTS).
- Double Solar Telescope (DST).

1.1. New equipments

Regular observations with new CCD Procitronic low light camera, Model RL4 have been started in 1998 at Double coronagraph. The camera is used for high time resolution observations of the solar corona.

Regular observations at the HSTS with Fiber Optics Device for measurement of rotational characteristics of sunspots and surrounding photospheric plasma continued in 1998.

1.2. Observations

Double coronagraph:
(days), Prominences (113), coronal line 530.3 nm (60), coronal line 637.4 nm (74).
Horizontal Solar Telescope with Spectrograph:
(Observations with Fiber Optics Device), 23 days, 24 spots.
Double Solar Telescope:
127 observations of sunspots (contributed to the SIDC in Brussels).
Solar Heliospheric Observatory (SOHO), TRACE:
SOHO JOP 78, Variability and Properties of the Quiet Sun Supergranular Network and Internetwork, (SUMER, CDS, MDI, TRACE, EIT), May, 1998.

1.3. Field of interest

No changes in the fields of interest in (1) Solar Corona, (2) Solar Photosphere and Chromosphere and (3) Long-Term solar Variability researches were realized in 1998.

A. Antalová, H. Balthasar and A. Kučera (eds.): JOSO Annual Report '98, 47 – 48

1.4. Cooperations

Continued: The cooperations with our colleagues from KIS, Freiburg (1995-98), were continued an official basis.
Also the cooperation with Crimean Astrophysical Observatory, Nauchnyj (1997 - 2000) continued.
Finished: The cooperations with Instituto di Fisica dello Spazio Interplanetario, Univ Roma, Frascati finished in 1998.
New cooperation: With Institut für Astronomie, Univ. Graz, Austria.
"Dynamics of the Solar Photosphere and Chromosphere as Inferred From Spectral Observations", 1998.

2. Hurbanovo (sponsored by the Ministry of Culture)

Present staff: 8 permanent positions = 5 astronomers (Dr. Ivan Dorotovič defended his Ph.D) + 3 technicians.
New e-mail address: **e-mail: suhsol@kemar.sk**

2.1. Fundamental Instruments

Coronagraph for prominence patrol (D=95 mm, f=1245 mm, FWHM of the H-alpha filter 0.6 nm).
Horizontal Solar Telescope with Spectrograph (HSTS).
Coude refractor 150/2250 mm for daily drawings of sunspots.

2.2. Field of Interest

2.2.1. Solar Photosphere

daily drawings of sunspots, photography of selected sunspots (statistics).
spectral analysis with HSTS (profiles, Doppler shifts, preparing of observations with a Fiber Optics Device in cooperation with Tatranská Lomnica and KIS, Freiburg, Germany).
Physical properties of 22-nd solar activity cycle.

2.2.2. Solar Chromosphere

observation of solar flares.

2.2.3. Solar Corona

photography and colour experiment during the eclipse 1998 in Guadeloupe, structure, intensity and colour of the corona, physics and statistics.
- correlation between the occurrence of large prominences at the eastern limb of the Sun and the geoactivity as well as between the green corona and the geoactivity.
- The scientific material gathered during the eclipse 1998 in Guadeloupe was reduced and interpreted in a collaboration with the colleagues from Tatranská Lomnica (white-light photography and special colour experiment).

2.3. Meetings

The 14-th Joint Solar Meeting of Slovak and Czech Solar Physicists (June 1998) was organized by SCO in Stará Lesná.