

# Bucharest Solar Station (1956-2013)

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## Time milestones

- Founded in 1956
- Solar Patrol Observations ( 1957 – 1997)
- Total Solar Eclipse 1999
- 2000 – New CCD
- Active region and filament observations
- 2004 – Venus transit
- 2002- 2009 – Repair of the solar dome
- 2006 – New H alpha filter

## Observational programs

- Solar patrol (1957-1997)
- International Geophysical Year (1957-1968)
- International Quiet Sun Years (1964–1965)
- Proton Flare Project (PFP, 1967)
- Rapid Variations of the Solar Magnetic Fields (KAPG, 1966–1974)
- INTERCOSMOS (1964–1977)
- Campaigns of observations (2001-2004)

## Observations Solaires Bulletin

**Observations Solaires Bulletin (Bucharest, Romanian Academy Publ.House, 1956-1997)**, in French language, proposed for the Romanian Academy Prize, was the main own journal that published the events data registered during the solar patrol observations at Bucharest Observatory. This bulletin is actually a solar catalog containing data of our archives (photographic plates and films). *Observations Solaires*, with one yearly issue, published our data on sunspots group evolution, the observed Halpha flares and prominences activations.

## Solar Patrol Observations ( 1957 – 1997)

The systematic solar observations began in Bucharest in 1956, through the setting up of a solar working group in 1955. In the International Geophysical Year (1957-1958), a five meters diameter solar dome was built and the equipment was purchased for survey the solar photosphere and chromosphere (C.Popovici, *Bucharest Observatory*

*Solar Station*, Sol.Phys.9, 494, 1969).

In 1957, a Halpha observations network was established world wide long.

**Bucharest Solar Station** occupied a strategic place also in the old international network (**code name BUCA**), providing solar photospheric and chromospheric data monthly bulletins for the meridian **GMT+2**, together with Athens and Kiev.

The sunspot data monthly bulletins were sent to **data centers of Pulkovo (1957-1968), Zürich (1957-1982), Freiburg (1957-1968), and Bruxelles (1983-1997).**

**The 130/1950 mm refractor (Zeiss, 1957)** has been used at daily, visual and photographic observations of the photosphere for: sunspot relative number determination; sunspot coordinates and evolution; sunspot area.

Storage old: paper and plates of 130 x 180 mm. The cadence was: 1 + 2 plates/day and 1 diagram/day, with an approximate number of 240 days/year.

**The 80/1200 mm refractor (Zeiss, 1958)**, equipped with a Halle Lyot-Ohmann filter (0.5 Å pass-band), until 2004, has been used for chromospheric patrol observations, visual and photographic (storage: 35 mm film). The cadence of the patrol observations: photos at 1-5 min, 2-3 hours/day, approximate 6-31 days/month, between 1956- 1997.

The filaments activation and flares occurrence were monitored.

Monthly telegrams were sent to four data centers: **Boulder Colorado, Meudon, Moscow (1958-1997), Pulkovo (1958-1997).**

The solar features observed at Bucharest Observatory were **published in:** *Solar Geophysical Data (USA), Quarterly Bulletin of Solar Activity (Japan), Solnechnye Dannye (Russia), Observations Solaires (Bucharest, Romanian Academy Publ.House, 1956-1997).*

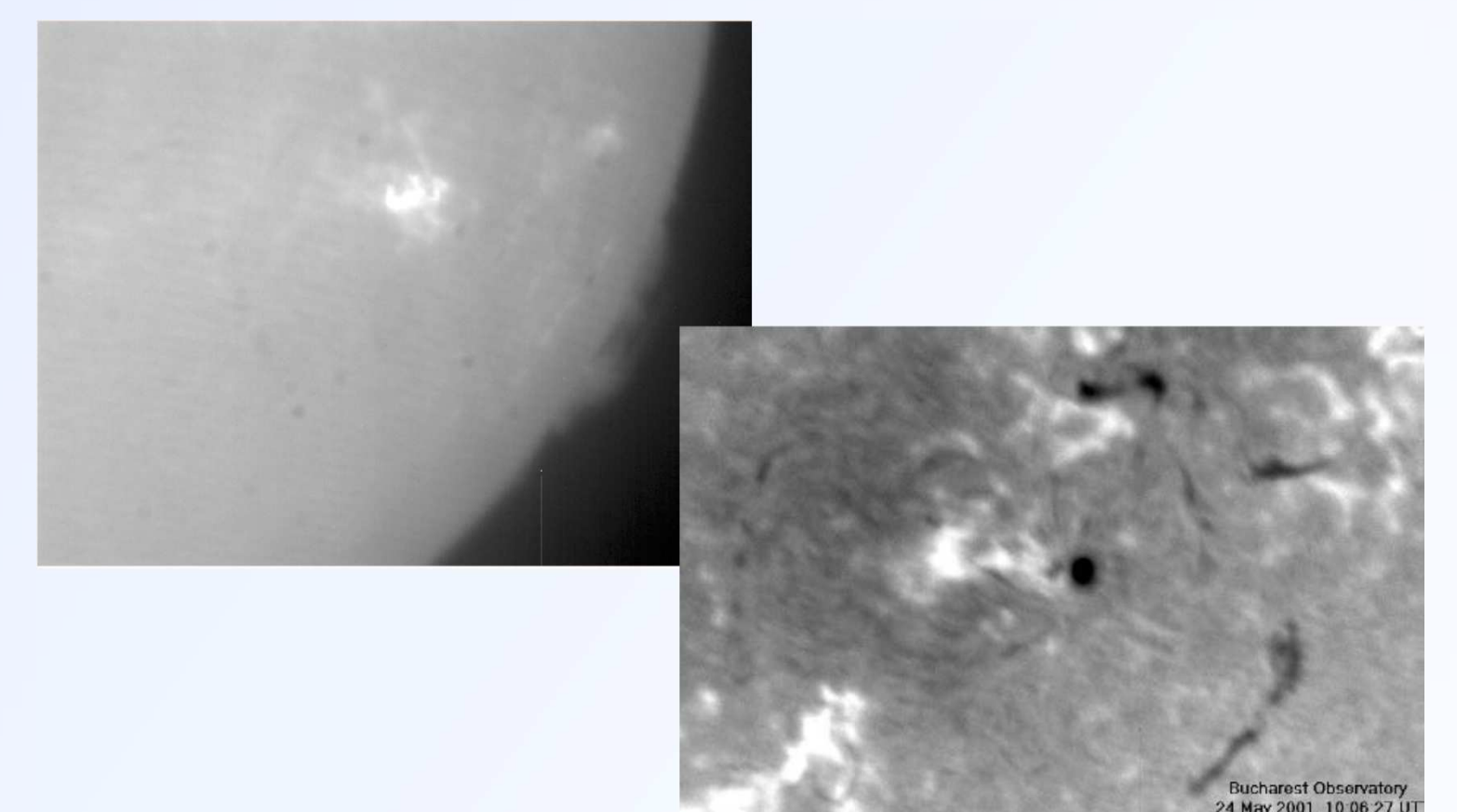
## Future plans

- New CCD 2048x2048 px for chromosphere
- Transformation of the photospheric refractor for full disk CCD observations
- New CCD 4008x2672 px for photosphere
- Obtaining extra budgetary funds for investments and salaries and participating to the European Network for solar patrol (solar weather).



## After 1999

A ST-7 CCD camera, 765 x 510 pixels (field of view 0.6x0.4 from the solar disk), was purchased and the chromospheric refractor was modified for CCD observations. This change does not permit full disk observations and so, the solar patrol program could not be continued. Observational campaigns were only performed in Halpha.



## Instruments now

### 1. Chromospheric refractor:

- Zeiss Refractor (1957) 130/1950 mm
- Solar Observer H alpha Filter S-1.5 (0.3+/- 0.05 Å) (2006)
- CCD camera ST7 765x 510 px – it observe a fragment of the solar disk and it is too old

### 2. Photospheric refractor:

- Zeiss Refractor (1958) 80/1200 mm – for white light observations by projection on a screen

*No finances are yet assigned for solar patrol.*