P I S Z K E S T E T O M O U N T A I N S T A T I O N

U S E R S' G U I D E T O T H E 50CM C A S S E G R A I N

T E L E S C O P E & I T S I N S T R U M E N T S

April 18 2000

Robert Szabo

Modified by A. Holl, using the README file of G. Viraghalmy

WARNING: THIS MANUAL IS NO WAY A SUBSTITUTE FOR AN INTRODUCTION
TO THE TELESCOPE AND CAMERA BY A STAFF ASTRONOMER!
YOU ARE ASKED TO CONSULT ONE BEFORE STARTING YOUR OBSERVATIONS!

OBSERVATORY DATA

Location: Piszkesteto, Matra Mountains, Hungary

Latitude: +47deg 55.1

Longitude: +19deg 53.7

Height above the sea level: 958m

Time zone: MET

T E L E S C O P E   D A T A

Diameter: 50 cm

Focal length: 7500 mm

Optical design: Cassegrain

Year of installation: 1966

Instrumentation: 1-channel, cooled UBVRI photometer

TELESCOPE AND PHOTOMETER OPERATION

BEFORE OBSERVING

- There are four electric switches to the left next to the entrance. The main switch and the quartz clock switch must be always "on" state. Switch on only the "VILAGITAS" (light) and the "FUTES" (heating) switches.

- In the room on the ground floor one can find the sideral clock drive, the photometer (3 separate) the "main" and "sec" switches. Don't forget to switch on the power.

- At the dome switch on the computer that controls the photometer (and the distributor, too). Also switch on the main power, the clock and the sideral clock drive on the axis of the telescope.

- Open the main mirror covers by hand and remove the secondary mirror and tube covers, too. Also take off the covers of the finder and guide telescope.

- Adjust the ocular in order to get a sharp boundary of the diaphragm. If the ocular is in it's outer position, then the light reaches the photometer, otherwise the field can be seen through it. Sometimes the ocular needs greasing for smooth motion.

- Now you can switch on the high voltage of the photometer. It must be done at least one hour before observing! For the photometry of a 9-10th magnitude star the voltage should be set approx. 720V. For fainter stars lower voltage is enough. BE SURE, THAT THE PHOTOMETER IS NOT ILLUMINATED UNTIL OBSERVING!

TELESCOPE OPERATION

- Before opening the dome, disconnect the fire alarm cable.

- The dome opening works only manually. The dome can be rotated by the round taster on the telescope.

- Positioning and fine motion. Move the telescope by hand to the approximate position on the sky with the help of the coordinate disks after release the locking arms of the two axes. You will need the exact sideral time for the time and place of observing to set the right hour angle. The end of the locking and fine motion rod of the hour axis are concave, and the ones belonging to the declination axis are convex. Fix the telescope before use fine motion!

- Focusing the telescope. Adjust the focus by the bigger button near the focal plane of the telescope. Be careful! The other one will release the whole instrument from the telescope! Change the focus only after setting the diaphragm properly.

GENERAL REMARKS

- DCF-time is available on the PC after a couple of minutes. You will see 0 and 1 digits after the connection is established.

- Heating have been installed to avoid any harm of the PC in winter. It consists of two electric bulbs. Please check if both of them works. Also a thermostat can be found on the desk of the computer.

- On the axis of the telescope you can find a window that shows how many hours can the telescope move to the west.

- You can check which filter is selected, because a red LED is light when the V filter is in. It's also a good idea to write down the time occasionally when the V filter is selected, because the clock might be inaccurate.

- When the ocular is not in use you are asked to put back the cover.

- The illuminated cross-wired ocular can be rotated, shifted, and the illuminating light-intensity also can be adjusted.

USING THE PHOTOMETER

(The translation of the README.TXT file written by G. Viraghalmy)

The UBVRI photometer

The instrument has tho parts: the photometer head and the power supply. The multiplier is cooled by a Peltier system to -20 deg C. The head contains the high voltage unit, the pre-amplifier and the counter too. The bandwidth of those are higher then 100 MHz. The counter is connected to the card in the computer by a special serial cable. The filter-wheel position, integrating time and other parameters can be controlled from the computer (PC).

The power supply provides the stable DC power needed by the photometer head, and gives current-limited power to the Peltier cooling system. It is operated from 42 V AC power, through a 200/42 V converter.

Power-on sequence

1.) Power on the 42 V converter. The cooling and the fans would start then. The operating tempereture is reached when the green light on the power supply is on. The operating tempereture is reached in 25-60 minutes, depending on the environment temperature. The number of dark counts is less than 50 at operating tempereture.

2.) Switch on the high-voltage unit with the switch on the power supply, next to the cooling fan. The high-voltage unit starts with a characteristic high-pitch noise. The pre-amplifier will be powered on with this switch too.

3.) Power on the computer.

4.) The photometer can be operated with the UBVRI_50.EXE program. The data will be saved during observation to the drive the program was started from. We advise to copy UBVRI_50.EXE to your own diskette, and start it from there.

IMPORTANT!

After observation turn off the switch on the power supply first!
Otherwise the transients of the 42 V converter will damage the
pre-amplifier. Such damage will accumlate and eventually breaks
the pre-amplifier.

(written: 8th August, 1993, modified: 1st March, 2000,
translated by A. Holl)

AFTER the OBSERVATION

After observing please go through properly each step written
in the "Before Observing" and "Telescope Operation" sections
in reverse order.

PC USAGE

GENERAL RULES

No instrumentation should be installed or modified without the
permission of the technical deputy director.

Publications using observations made at Piszkesteto should
contain an acknowledgement, and should appropriately refer
to the telescope and detector.

+-+

In case of technical problems with the dome or the telescope
contact Miklos Racz (racz@konkoly.hu)

More information about the local computer system can be found at
http://www.konkoly.hu/local/ in Users guide to the Piszkesteto
Mountain Station Computer System.