tense in 2020. This year, the AZT-28 telescope of the CSIRP and NFC (MPC-code L-18) became one of the most productive Ukrainian instruments for observing the NEO. Since June of this year, the new Newtonian 0.5 m f/3.8 telescope began to take part in the observations. The first results suggest an increase of the limiting magnitude for the observed NEO.

INVESTIGATION OF THE PHOTOMETRIC SYSTEM OF THE METEOR TV CCD CAMERAS

Kulichenko M.O., Maigurova N.V., Shulga O.V.
Research Institute "Mykolaiv Astronomical Observatory"
niiko4kulichenko@gmail.com, shulga-av@ukr.net

Photometric information remains the main source of our knowledge about the physical properties of celestial objects. This report presents the results of a study of the photometric system of the same type 8 meteor telescopes with wide field lens (f=50 mm, f/1.2) and WAT-902H2 cameras installed in Mykolaiv and Odessa. These telescopes are equipped with broadband filters at red and blue ranges. The pass bands of our filters are close to Gaia BP/RP photometric system, which was chosen as standard system. The transformation coefficients to transfer the instrumental values of magnitudes to the Gaia BP/RP photometric system were derived by the linear regression method. The mean standard errors of the photometric solution are 0.3^{mag} and 0.4^{mag} for RP and BP ranges, respectively. The possibility of color index determinations based on reference stars observations was shown.

METROLOGICAL PROPERTIES OF A PHOTOSENSOR OF THE DIGITAL CAMERA CANON EOS 5D MARK III

V.A. Psaryov, V.V. Konichek, I.Ye. Sinelnikov
Astronomical Institute of V.N. Karazin Kharkov National University

The need for photometrological studies of the Canon EOS 5D Mark III digital camera is due to the use of this camera as a recording device in the design of a number of laboratory photopolarimeters created at the Research Institute of Astronomy of V.N. Karazin. A full-format (24mm × 36mm, 3840 × 5760 pixels) CMOS (SiMOS) matrix is used as a photosensor of this camera. This is different from the usual use of CCDs in astronomical research. Knowledge of the photometric properties of this camera has become necessary also because it is used to absolutize photometric results, which, as a rule, have a very wide range of values.

To carry out photometric studies, an auxiliary quasi-point light source was created, which is mounted on a camera. For all shutter speeds from 32 sec to 0.000122 sec, a series of twenty frames (files) were obtained at a sensor sensitivity of ISO 12800, as well as a series for all ISO values from 100 to 12800 at a shutter speed of 6 sec.

For each series of exposures, the average signal value in the frame was determined and the dependence of the average signal level normalized to the exposure duration on the duration of the corresponding exposure was plotted. The resulting dependence of the output signal on the exposure duration is linear within the signal levels from 11721 to 1.5. With a luminous flux that was maintained in the experiment, these signal levels were achieved at exposures of 24.7 sec and 0.003 sec, respectively. Thus, the dynamic range of the camera's photosensor reaches 7946 (3.9 on a logarithmic scale).

The dependence of the output signal on the sensitivity of the camera sensor is obtained in a similar way. The relative deviations of its individual points from the linear dependence does not exceed ± 6%, from which it follows that with different luminous fluxes falling on the matrix and the same exposures, the ratio of the values of the output signals will correspond to the ratio of ISO levels. Thus the ISO level bar can be viewed and used as an optional stepped photometric wedge (attenuator). And this is quite an important point for standardization or absolutization of photometric results that have significantly different values.

THE GREATEST ACHIEVEMENTS OF UKRAINIAN COSMONAUTS

M.I. Ryabov, B.A. Murnikov
Odesa Astronomical Society

From the very beginning of the Space Age, the Ukrainians have been active participants in the space related events. Two lead rocket engineers and spacecraft designers – namely, Sergey Korolyov (who was born in Zhytomyr and spent most of his youth in Odesa) and Valentyn Hlushko (who was born in Odesa, wherein his ambitious dreams about space travel arose) – played a key role in launching the first human, Yuri Gagarin, in space into Earth orbit. These facts are already well known, however, they have not received extensive coverage in Ukrainian mass media.

The names of cosmonauts (astronauts) born in Ukraine have also been consigned to oblivion. There has been a total of 19 native-born Ukrainian cosmonauts, ranking Ukraine third globally, after the U.S. and Russia holding the top two positions, respectively. China has already put 11 astronauts, sometimes called taikonauts, into orbit, and thus it will outrun Ukraine in the not-too-distant future.

The first member of a pleiad of Ukrainian cosmonauts was Pavlo Popovych who was launched in space in 1962. The legendary pilot Georgy Beregovoy was the next one to travel into orbit in 1968; the 100^{th} anniversary of his birth will be celebrated this coming year. The third Ukrainian cosmonaut, Georgy Shonin, whose life revolved around Odesa city for years, flew on the space mission in 1969. An Odesa native, Georgy Dobrovolsky became the fourth Ukrainian cosmonaut; he died tragically during the re-entry of the space-mission capsule after 23 days in orbit. Being the first astronaut of independent Ukraine and 18^{th} in the list of Ukrainian cosmonauts, Leonid Kadenyuk took a 15-day flight into space. Remarkable records for the longest human spaceflights set by other Ukrainian astronauts in no way detract from Leonid Kadenyuk's merits and civic mindedness in addressing issues related to the protection for the space industry of Ukraine. Among Ukrainian cosmonauts, Yuri Malenchenko ranks the first for the career time in