2.6-m telescopes of Crimean Astrophysical Observatory. The 2.6-m and 0.7-m telescopes equip with the one-channel photopolarimeters, which work on the modulation principle with rapidly rotating polaroids. The observations were carried out with the HB narrow-band cometary filters: C_2 (5191/118 Å), GC (5260/56 Å), RC (7129/62 Å), and the wide-band filter WRC (7228/1142 Å). At the 1.25-m telescope the data were obtained with the five-channel UBVRI photopolarimeter.

Phase dependence of polarization for the comet in WRC filter was constructed in the range of phase angle 7°26°. We found the parameters of polarization phase angle dependence: the minimum of negative branch of polarization $P_{min} \approx -1.4$ %, the inversion angle $\alpha_{inv} = 21°.8$, and the polarization slope h = 0.224 % per degree. These parameters are close to that for dust-rich comets. The fluxes of the emission band C_2 and continuum for the comet C/2002 T7 (LINEAR) are also given. Molecular column density and production rate of C_2 species in the framework of Haser model are presented.

ASTROMETRY AT THE RTT150 TELESCOPE WITHIN THE INTERNATIONAL FRAMEWORK OF KSU (RUSSIA), TUG (TURKEY) AND NAO (UKRAINE)

Z. Aslan[1], I.M. Hamitov[1], R.I. Gumerov[2], A.A. Ibragimov[2], A. Nemtinov[2], A.V. Ivantsov[3], L.A. Hudkova[3], G.I. Pinigin[3], A.V. Shulga[3]

[1] TUBITAK National Observatory (TUG), Turkey (aslan@tug.tug.tubitak.gov.tr);
[2] AOE KSU, Kasan, Russia (rgumerov@ksu.ru);
[3] NAO, Nikolaev, Ukraine (pinigin@mao.nikolaev.ua);

Modern astrometric projects demand accurate measurements of position for objects down to 20–22 magnitudes. With ground-based observations, it is possible to do this with astrographs of 1 metre aperture or more with accurate tracking at long exposures and accurate timing. The multi-functional astronomical complex RTT150, implemented on the basis of AZT-22 telescope (LOMO, 1995), is suitable for such purposes (http://www.tug.tubitak.gov.tr/rtt150).

Special properties of the RTT150 computer control system, which ensure the necessary astrometric characteristics are presented in the paper. A possibility for accurate tracking is recognized for telescope motion along a given trajectory, which is successfully used for corrections of irregularities of the general gear and for compensation of the influence of differential refraction at great zenith distances. The computer control software has a user friendly interface which allows one to control the telescope both interactively and in automatic mode for a given list of objects. RTT150 is equipped with three CCD cameras, which give a possibility to conduct observations in tracking (stare) mode and drift scan one.

Description of the observation programs and methods is presented for new astrometric projects. In particular, problems concerning the research on small bodies of the Solar System down to 20 magnitudes are picked out, such as determination and improvement of the orbital elements of the near-Earth objects, determination of masses for the selected asteroids by the gravitation perturbations of the lesser asteroid orbits, participation in compiling an input catalogue of accurate positions of selected minor planets for ground-based provision of international program "GAIA Follow-Up". Besides, photometric observations of brief occultations of stars by asteroids have been planned which will allow us to determine both accurate position of the asteroid and its diameter, presence of a companion and other characteristics.

It is planned to use the method and experience of CCD observations, which have been gained during the observing program of extragalactic radio sources (stare mode). It is possible for asteroid observations in drift scan mode to use the covered strips method [1] and combined CCD method [2].

Determination of accurate positions of small bodies of the Solar system with RTT150 can be realized with an accuracy of about 50 mas using of reference catalogues of high accuracy and density (TC2, UCAC, USNO-B1, etc).

1. R.I. Gumerov, A.N. Kovalchuk, G.I. Pinigin, Yu.I. Protsyuk, A.V. Shulga: 1999, Kinematics and Physics of Celestial Bodies. Supplement N1, Kiev, p. 79-83 (in russian).

2. V.Dedenok, Abrosimov, G. Pinigin, A. Shulga et al: 2001, In "Extention and Connection of Reference Frames using CCD Ground-based Technique", Intern. conf. G.Pinigin (ed.), Atoll, Nikolaev, 2001, p.170-179.