**ISOTHERMAL TRAJECTORIES FOR THE HABITABLE PLANETS.** N. I. Perov, Cultural and Educational Centre named after Valentina Tereshkova, ul. Chaikovskogo, 3, Yaroslavl, 150000, Russian Federation. E-mail: perov@yarplaneta.ru.

**Introduction:** There are known dozen factors determined possible origin and evolution of exoplanetary life. For the life of the Earth’s type these factors are – the temperature of the star, semimajor axes and eccentricity of the planetary orbit, period of planet’s rotation, the angle between plane of equator and planetary orbit plane, water on the surface and the vapor in the atmosphere, volcans, mass of the planet, satellite of the planet, dependence “energy–mass–food–size of the animals” [1]. Below we consider the quasiisothermal orbits of the habitable planets $m_3$ in the binary system consisted of two stars with mass $m_1$ and $m_2$ in the frame of the restricted planar circle 3 body problem.

**Fundamental Equation:** We use the well-known differential celestial mechanical equation [2] and dependence between temperature $T$ of the planet and planetary distances $r_{13}$ and $r_{23}$ from the stars. (For the system “a star and a planet” we have $T~r^{3/2}$ [3]).

**Examples:** For the numerical experiments we put $m_1/m_2=50$, $m_3$ is mass of a planet. In the process of the corresponding equations solving we use the following units: $m_1$ is the unit of mass, $r_{12}$ is the unit of length, the unit of time $t$ is corresponded for the case $G=1$, where $G$ is the gravitating constant. Moreover, we put for all considered cases the following initial conditions: $x_1=0$, $dx_1/dt=0$, $y_1=0$, $dy_1/dt=0$, $x_2$≠0, $dx_2/dt=0$, $y_2=0$, $dy_2/dt=0$, $x_3$≠0, $dx_3/dt=0$, $y_3=0$, $dy_3/dt$≠0. The results of the numerical experiments in intervals of time $t$ motion corresponded to hundreds and thousands revolutions of major bodies are presented in Fig.1 – 3.

**Conclusions:** There are existed (theoretically) quasiisothermal trajectories (40°C<T<+40°C) for the habitable planets (in the binary systems of stars) in the form of the narrow rings – a) near the star – satellite; b) near the main star; c) near both stars ($r_1$>1). (Fig.1. and Fig.2.). Moreover, we found “strange” quasiisothermal trajectories of habitable planets (Fig.3.). In the work [3] the life’ belts are considered for two body problem like “a star and a planet”.