The Complex Gravitational Lensing

Mr. Alexei N Golovanov
ggalexe@gmail.com
MSU

Abstract: The theoretical base of gravitational lensing is investigated. New theoretical model which mathematically simpler and physically clearer than General Theory of Relativity is offered. In this model, the existence of new field with induction nature is justified. This field is generated by the moving gravitational charges like the electrical charges generate the magnetic field. It is suggested that the empty space does not have any properties. Mach's principal is used. Set of differential equations, which eliminates the shortcomings of classical Newtonian mechanics and General Relativity, is made. In the transition from one reference frame to another the covariance of all equations is saving. Thus problem of reference frames choosing is totally removed. Any frame can be the preferred, regardless is this frame inertial or not. Space in this model has zero curvature. But all effects of the General Relativity (Mercury's behavior, gravitational effects of light, effects explained by the Dark Matter, Black Holes and etc) and some observed and unexplained phenomena (inertia, disk-shaped structures, spiral deviation of the ray of light) are explained by the action of the gravitation and the new field. The formulas of the model become same formulas of Special Theory of Relativity in Galilean frames of reference. The model predicts that gravitational lensing is more complex than it is predicted by the General Relativity and can include the opportunity of simple arc deviation, spiral deviation, strong focusing and capture of light (like Black Hole capture and Dark Matter action) and more complex cases. Both Doppler and Einstein's effects become one. The light interacts not only with gravitational field, but also interacts with the new field. If big quantity of massive bodies is moving around one point or axis, strength of the new field is big and can be calculated by the formulas analog to formulas for magnetic field's calculation. Thus centers of galaxies and clusters can focus the light and screwing it. The ray of light changes the direction and start screwing around the axis of galaxy or cluster. If strength of the new field is not enough for it, ray of light is deflected by the small angle and get form of spiral with big step. This spiral can be deformed by the gravitational field. Main formulas of these effects are obtained. Some effects have been calculated and excellent agreement with observations has been found out.