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ON THE DYNAMICS OF A SPACECRAFT IN THE PHOTOGRAVITATIONAL FIELD OF THE SUN

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Abstract. The idea that the light pressure should influence the motion of illuminated particles has been known since J. Kepler (1571-1630), then, this idea explained the fact that the comets' tails were oriented in an opposite direction to the direction of the Sun. In the early twenties, P.N.Lebedev (1866-1921), E.F.Nichols (1869-1924) and A.W.Hull (1880-1966) found that the pressure of the light on a reflecting surface of 1 km^2 was about $8 \cdot 10^{-6}$ N/m^2, [3]. This pressure affects the orbital behaviour of artificial and natural celestial bodies with a relatively large area-to-mass ratio.