

Account of some Optical Inventions of
Professor AMICI
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1. The first, in importance, of Mr. Amici's papers is an account of an **iconantidiptic telescope**. Jeaurat's invention of a telescope that should exhibit at once two images, one erect, the other inverted, coinciding in the axis only, was improved by Kratzenstein and Euler: but it was demonstrated by Boscovich that “an iconantidiptic telescope with three achromatic object glasses produces a much less effect than a common telescope of half the length”, so that the advantage gained by the double velocity, with which the two images approach each other, is nothing more than might be obtained from a common telescope with twice or more than twice the magnifying power, as it might easily be made. He also showed that the telescope must fail in its proposed object of superseding the necessity of micrometer wires, for that the images could never be made to meet in the axis without having the assistance of a wire to guide the direction of their motion.

Mr. Amici observes that the optical difficulty might be avoided, by employing a reflecting instead of a refracting telescope, and by combining the constructions of Gregory and Cassegrain in the same instrument; but that the weight of such a telescope would render it inconvenient for astronomical observations. Still, however, the wires would be required, and the advantage of viewing very faint stars, without the danger of extinguishing their light by the illumination, would be lost. He therefore proposes to obtain a double image by reflecting half the rays, so that it may be formed in a simply inverted and wholly reversed position; and that if the plane of reflection be situated, for example, in that of the meridian, the images of all the stars in the field would meet each other at the true moment of their transit, while, in the construction of Jeaurat, none of them could coincide unless they were precisely in the axis of the tube. For this purpose he places, “in the focus of the eye-piece next to the object glass, a small rectangular isosceles prism of glass, the plane opposite to the right angle passing through the axis of the telescope, and its edges being perpendicular to it, so as to intercept half of the pencils of rays belonging to each point of the object, and to form with them a reflected image” depending on the internal reflection of the base of the prism. The instrument in this form appears to be peculiarly adapted to the observation of transits, though it may possibly require some modification both in the angle of the prism, and in its place with regard to the focus of the telescope.