PROGRAMMES FOR COMPUTING VISUAL BINARY ORBITS FROM THREE FUNDAMENTAL POINTS AND THE APPARENT AREAL CONSTANT (*)

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Summary :

A complete overview on the programmes that are used at the Royal Observatory of Belgium, for conducting the computation of the orbit of a visual binary based on three fundamental points and the apparent areal constant is given. They include the necessary investigations of all incompatibilities that may be encountered during the computation, for instance - when resolving the Thiele-van den Bos equations - the recognition of the nature of the solution (elliptic, parabolic or hyperbolic) and the identification of trivial solutions. Some particular computations are made when necessary, for guidance to the best choice of the three fundamental points and the areal constant.

REMARKS ON THE THIELE-INNES ELEMENTS

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Summary : The Thiele-Innes elements show a discontinuity for e = 1. Other elements are proposed having similar expressions and same advantages but offering the interest of being valid in all cases of eccentricity.

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