

## LATERAL IMAGE PZT. DESCRIPTION AND OPERATING METHOD

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**ABSTRACT.** We faced the problem of designing and building a Photographic Zenith Tube with mercury basin and lateral plate-holder system providing enough accuracy to allow the determination of astronomical coordinates. This instrument is intended to work as a prototype of a bigger and more accurate one to be designed and developed in the future (Lopez , A. *et al.*: 1983).

From the beginning, we thought to make use of the scheme and the operating method of a classical PZT (Markowitz, W.: 1969), although we are aware of other new designs (Kühne, C.: 1978). The design of a classical PZT is easy, from a theoretical point of view, but any modification of that design must keep the optical principle on which it is based. Holding up this principle was our first problem because the PZT lens is designed with an outer nodal point on which the photographic plate is situated. This does not allow the use of normal objectives, which generally have the two nodal points inside. Our design is based on the idea of avoiding this inconvenience. We use a plain mirror placed near the objective that deflects the light of a zenith-star in such a way that the image of the second nodal point is located in the lateral of the system, where we place the photographic plate. Moreover, the design has the advantages of easy focusing, adjustment and levelling, and we can use it visually as well as photographically.

As the main function of this instrument is intended to be similar to classical PZT, we have preserved the same operating method of it.

### References

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