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TELESCOPES IN LOW VISION

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Abstract: *This paper describes about Galilean and Keplerian Telescopes in Low vision*

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INTRODUCTION:

There are different types of telescopes present. Among them, Galilean Telescopes and Keplerian Telescopes are most important in low vision.

FORMULAS AND TRICKS:

- A. $M = -D_{oc} / D_{obj}$ Where D_{oc} = ocular lens D_{obj} = objective lens
- B. Ocular lens power is greater compared to objective lens.
- C. No +/- sign should be used when magnification is denoted.
- D. Objective lens is always in Positive form.
- E. Ocular lens can be in Positive or Negative form.
- F. If ultimate result is in negative (-) form, then it will be considered as Keplerian Telescope
- G. If ultimate result is in positive (+) form, then it will be considered as Galilean Telescope

EXAMPLES:

1. Suppose,

Objective lens = +20.00 Ds

Ocular lens = -60.00 Ds

What will be the magnification and type of Telescope??

Solution:

- i. $M = -D_{oc} / D_{obj} = (-60.00 / +20.00) = 3x$ So, magnification is 3x
- ii. Here, ocular lens is negative and ultimate result is positive. So, it is considered as Galilean Telescope

2. Suppose,

Objective lens = +20.00 Ds

Ocular lens = +60.00 Ds

What will be the magnification and type of Telescope?? What is the tubelength of the Telescope??

Solution:

- $M = -D_{oc} / D_{obj} = (+60.00 Ds / +20.00 Ds) = 3x$ So, magnification is 3x
- Here, ocular lens is in plus form and ultimate result is in negative form. So, it is considered as Keplerian Telescope.
- Tubelength is denoted as "d" $d = f_{obj} + f_{oc} = 1/20 + (1/60) = 5 + 1.33 = 6.33$ cm So, Tube length is 6.33 cm

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