The Henry Mellish County School.

Name W. BAILEY

Form 4A

Subject PRACTICAL PHYSICS.

SISSON & PARKER, NOTTINGHAM.

January 21st. 1931

Optical Instruments.

① Reading or Magnifying glass. [simple microscope.]

② Astronomical Telescope.

The object glass (or objective) is a convex lens, and throws a real, inverted, and diminished image (IM) of a distant object (OB). In order that the intermediate image (I.M.) should be as large as possible the object glass should have a long focal length.

IM inside F, of eyepiece

The Eye-piece is a convex lens and forms a virtual, erect, and magnified image of (I.M.). With respect to the object OB, the image IM is inverted. The final image is virtual, inverted and magnified. The eye piece acts as a magnifying glass and therefore should have a short focal length, in order to magnify as much as possible.

Since the stars and the sun are spheres, it does not matter if they are viewed erect or inverted.

③ Terrestial Telescope or 3-lens erecting telescope.

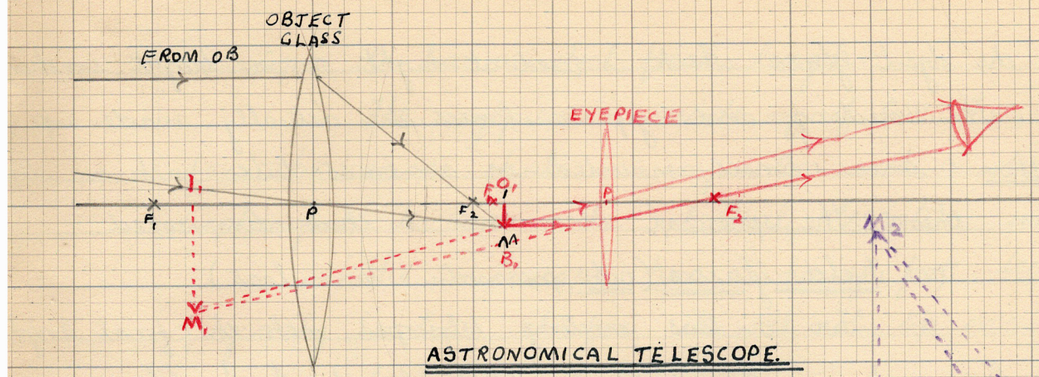
This is a convex lens with a long focal length. It throws a real, inverted and diminished image (R.I.D.)

State where the images come with respect to the various F's.

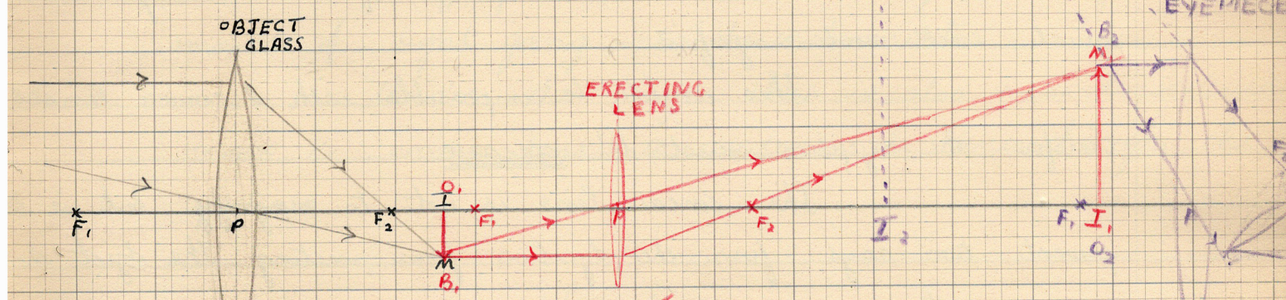
The image (IM) is then used as the object of the erecting lens. The image (M,I,) is then erect, real and magnified, an image of IM.

This image M.I. is then used as the object of the eyepiece which appears virtual, erect and magnified as M,I.

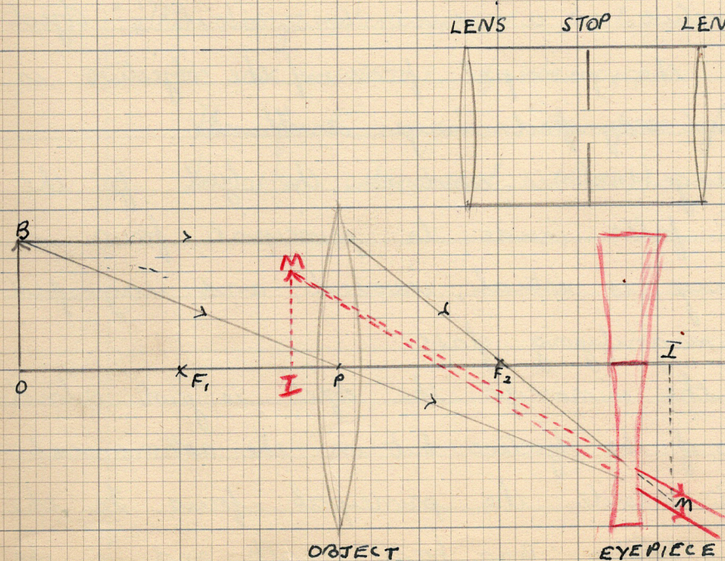
Dust shutters for the object glass and eyepiece are provided. There is a shade tube to keep out unwanted light



ASTRONOMICAL TELESCOPE.



TERRESTIAL TELESCOPE



Principal axes must be common.

OPERA GLASSES.

This lens system was that used by Galileo when he invented the telescope, and with which he first observed some of Jupiter's moons.