MASSACHUSETTS INSTITUTE OF TECHNOLOGY

APOLLO

GUIDANCE AND NAVIGATION

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E 1250

NAVIGATION

SECTION VII
OPTICS

by

Robert Magee

February 1963

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ASTRONAUTS

COURSE NOTES:

SECTION

OPTICS

This section contains the slides and notes used in a lecture on optics.

by Robert Magee

February

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700

6 $\approx 40 \times 10^{-6}$

for or

5×10^{-6}

$\times 10^{14}$ 500

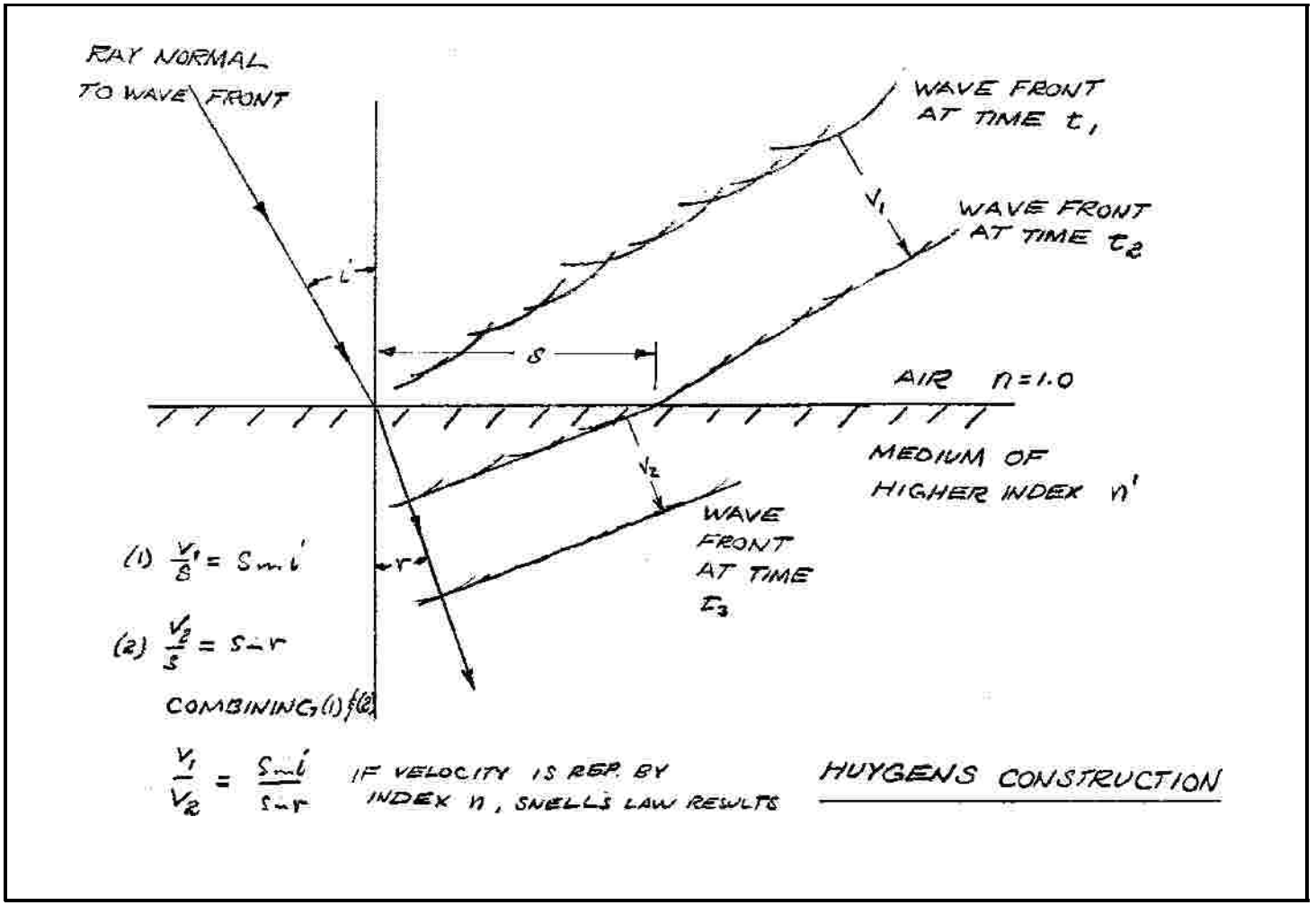

Fig. 7-1 Huygens construction.

Law

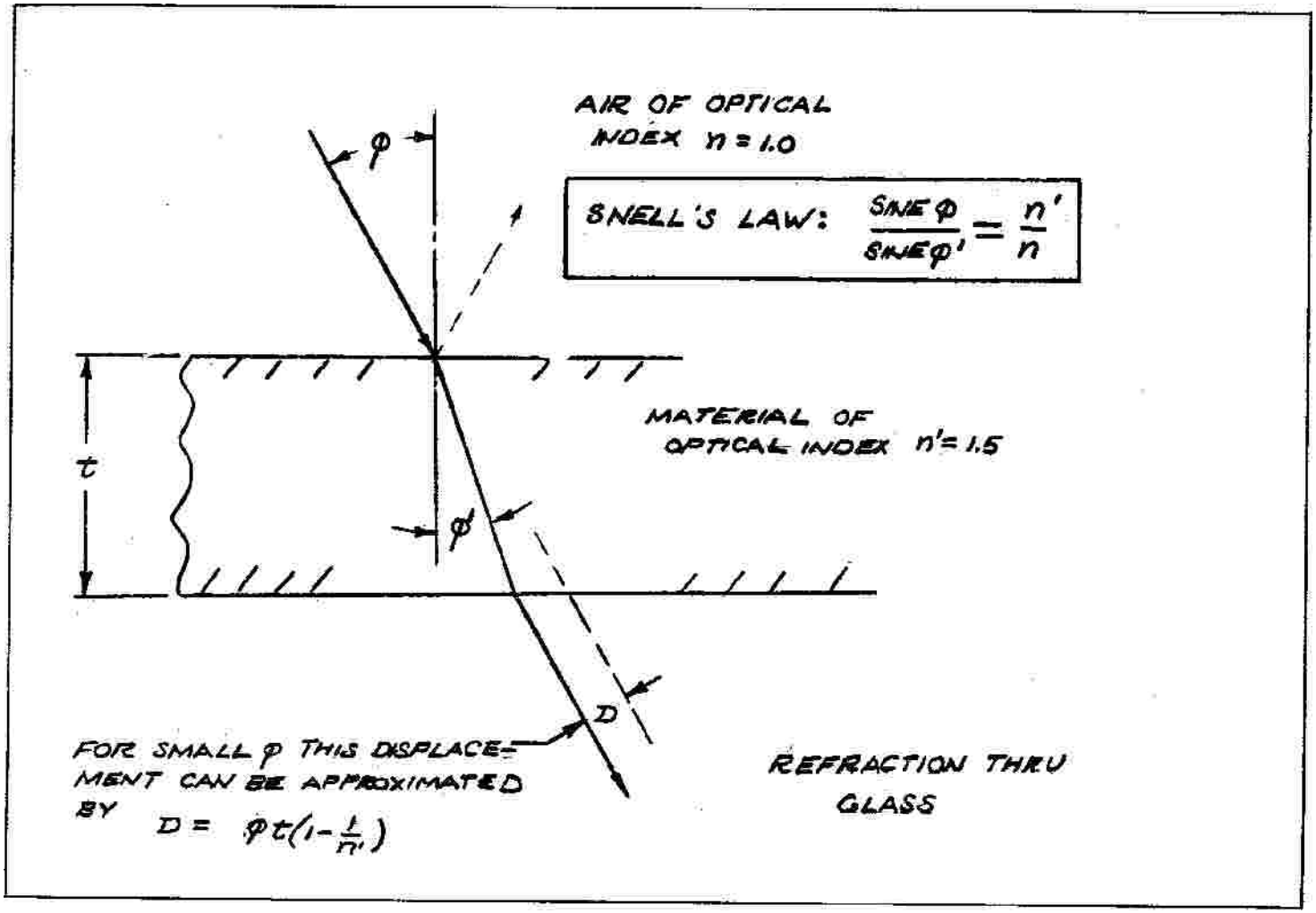

Fig. 7-2 Refraction through glass.

of

$$t(1-\frac{i}{n}),$$

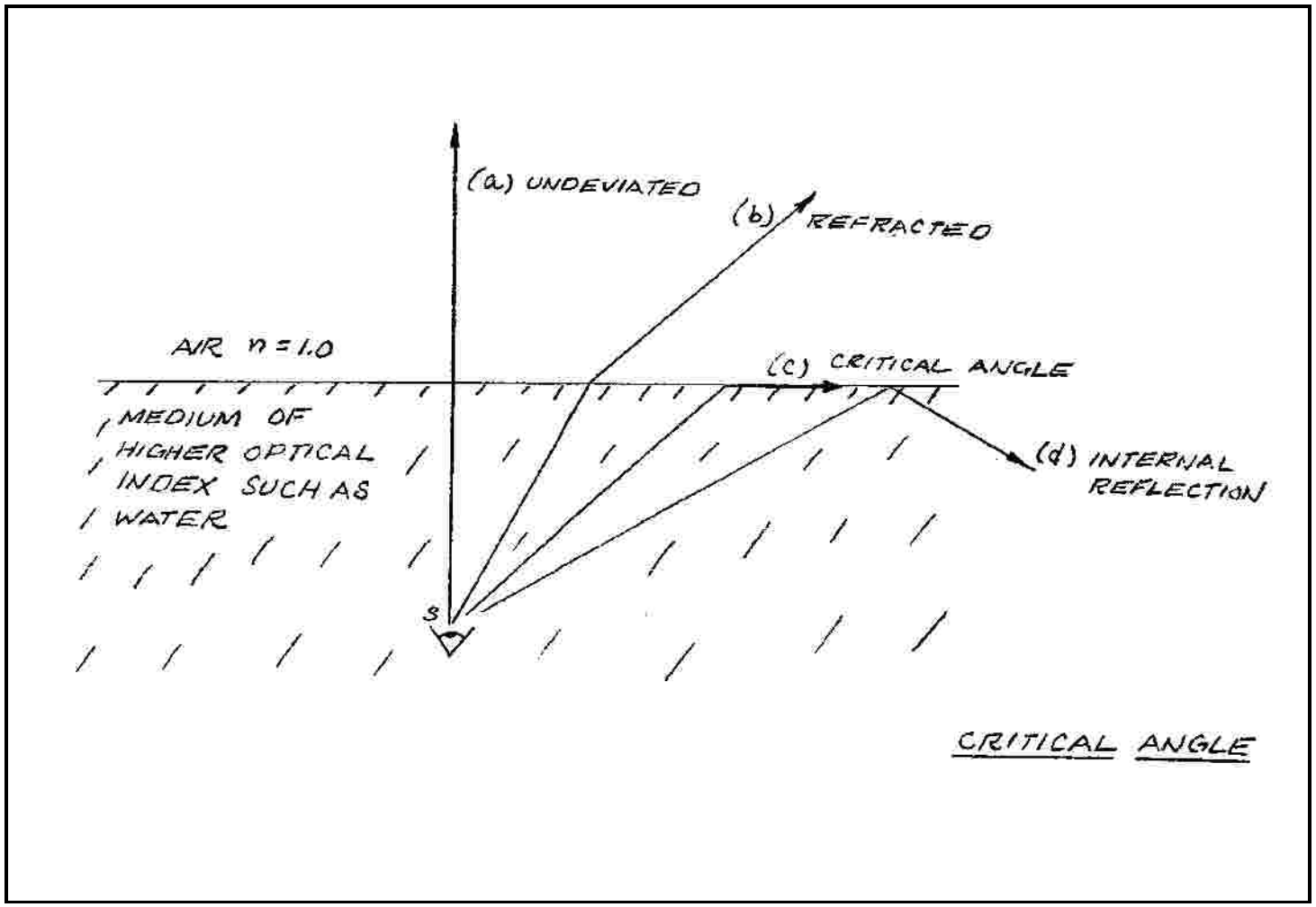

Fig. 7-3 Critical angle.

c

s

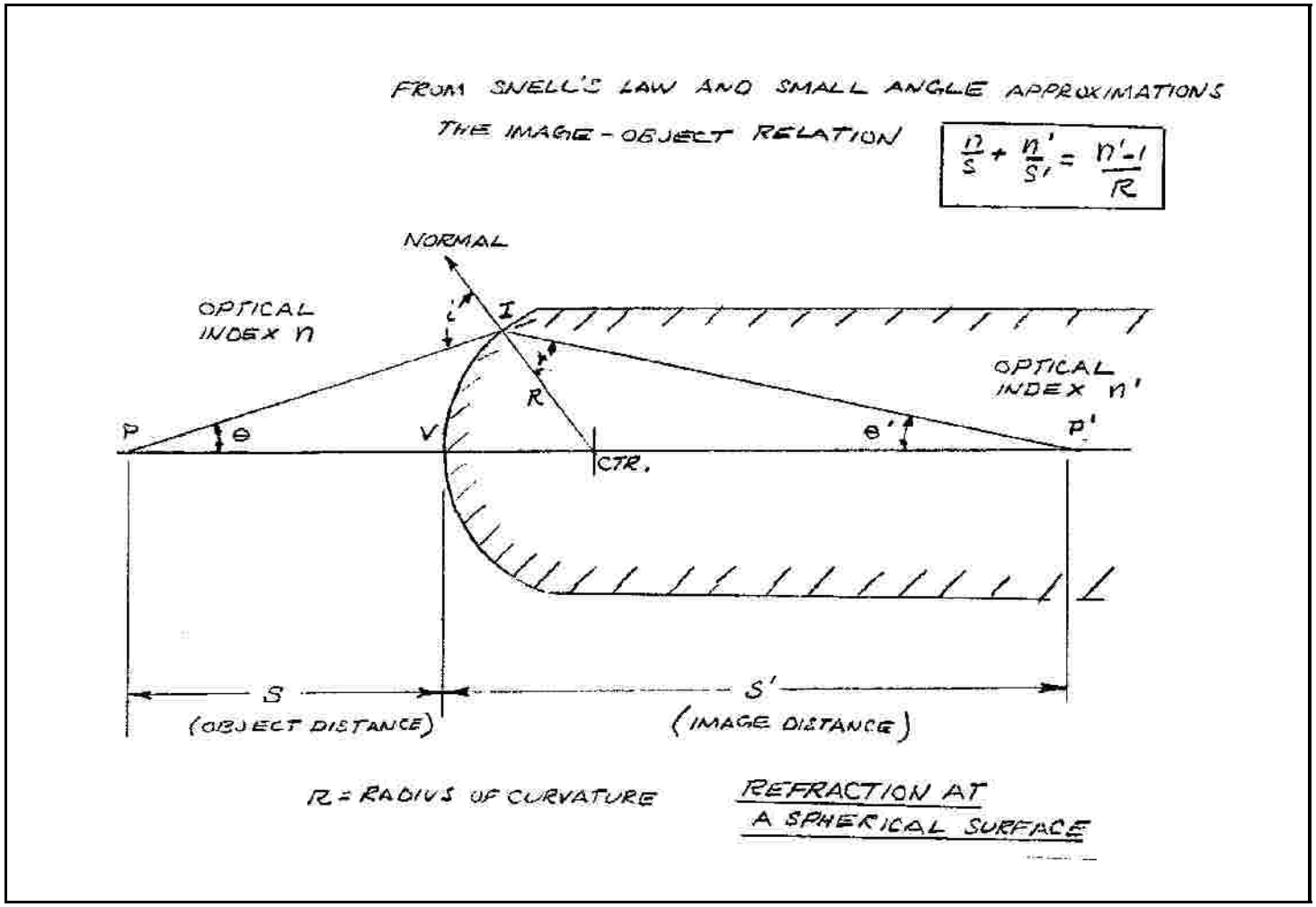

Fig. 7-4 Refraction at a spherical surface.

use

(s')

work):

$$\frac{n}{s} + \frac{n'}{s'} = n' - n\left(\frac{1}{R}\right)$$

so

$$\frac{1}{s} + \frac{1}{s'} = (n - 1)\left(\frac{1}{R_1} - \frac{1}{R_2}\right)$$

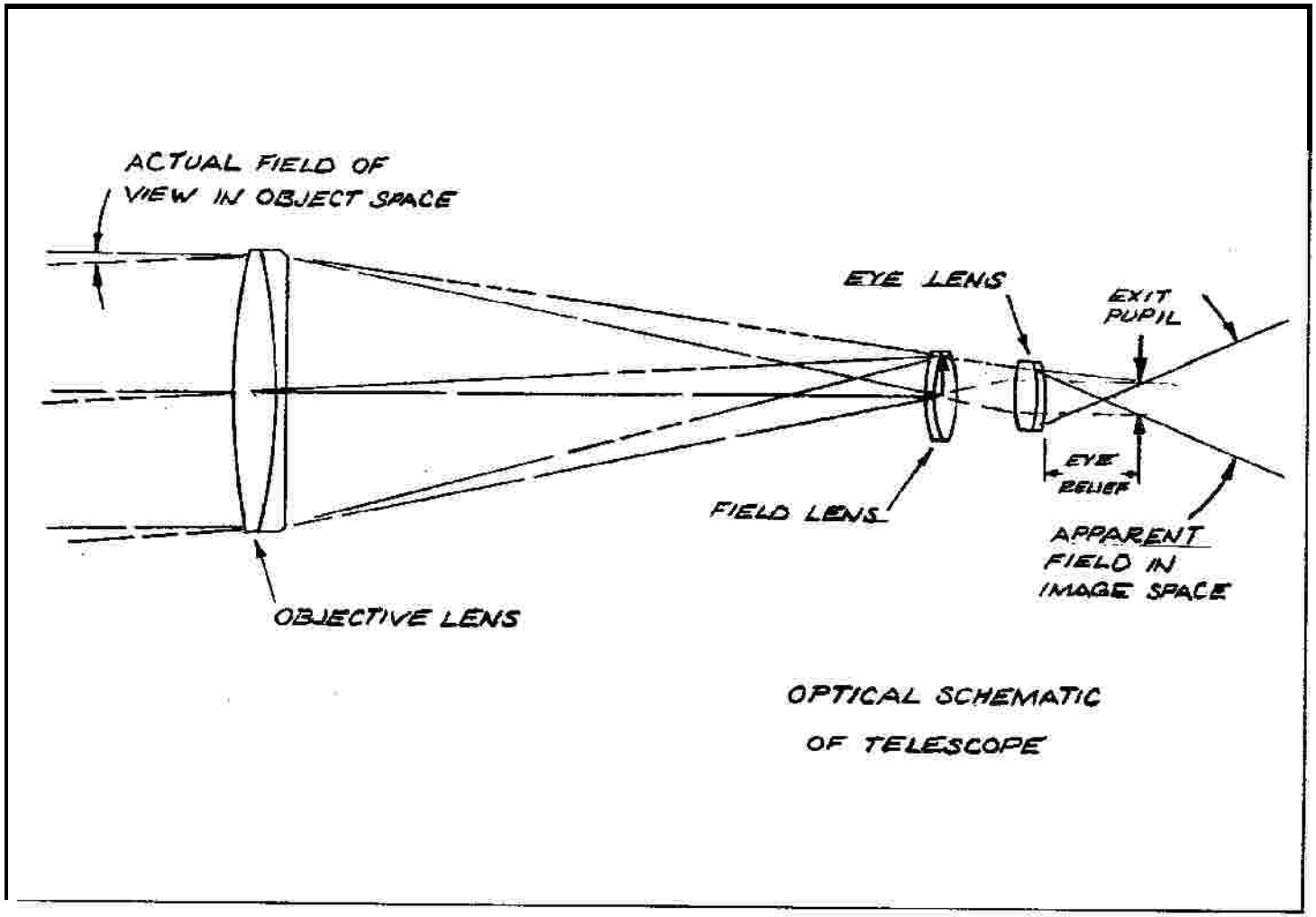

Fig. 7-5 Optical schematic of telescope.

for:

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(3)

x

x = 50

50, 70)

M

-

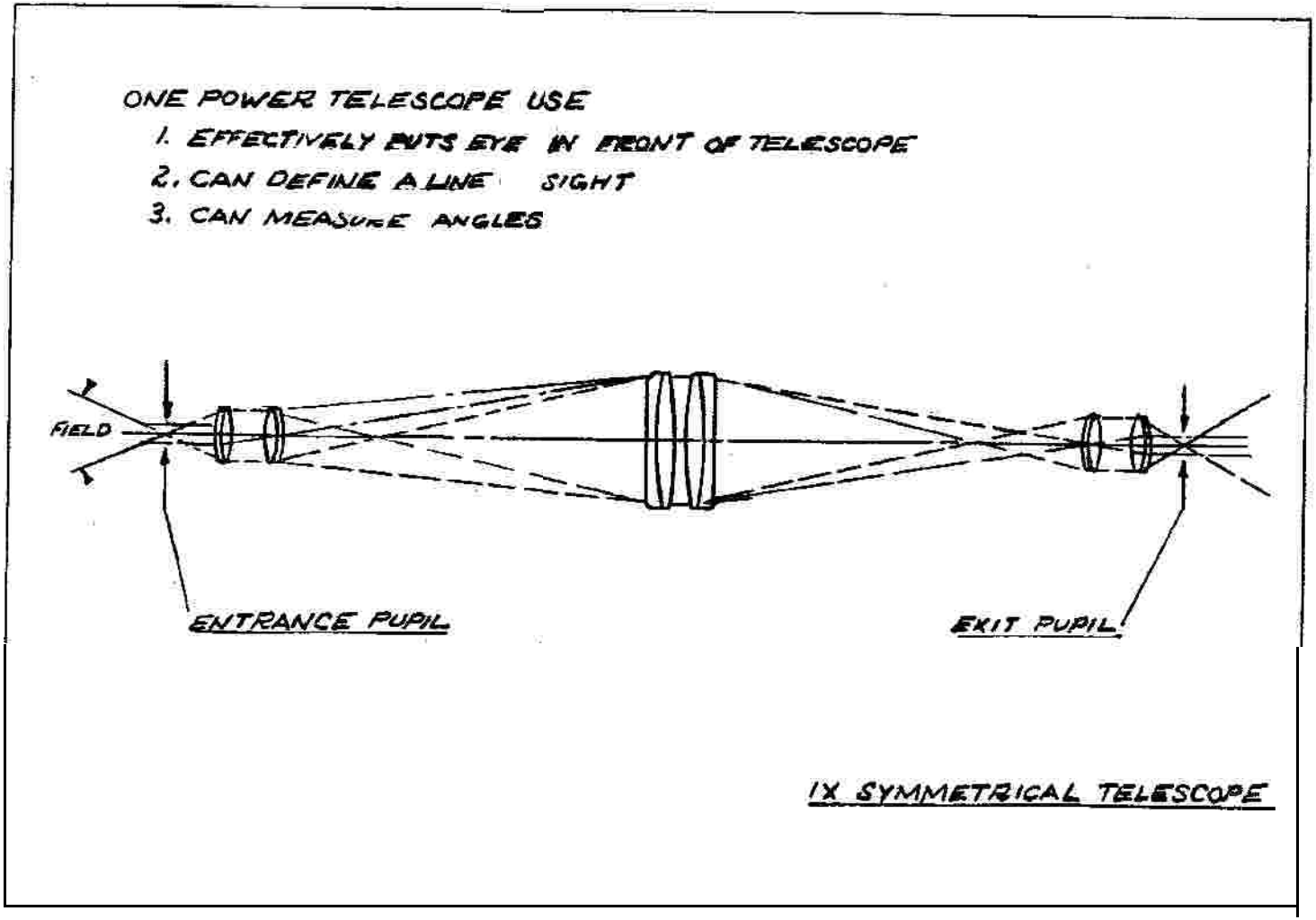


Fig. 7-6 One power symmetrical telescope.

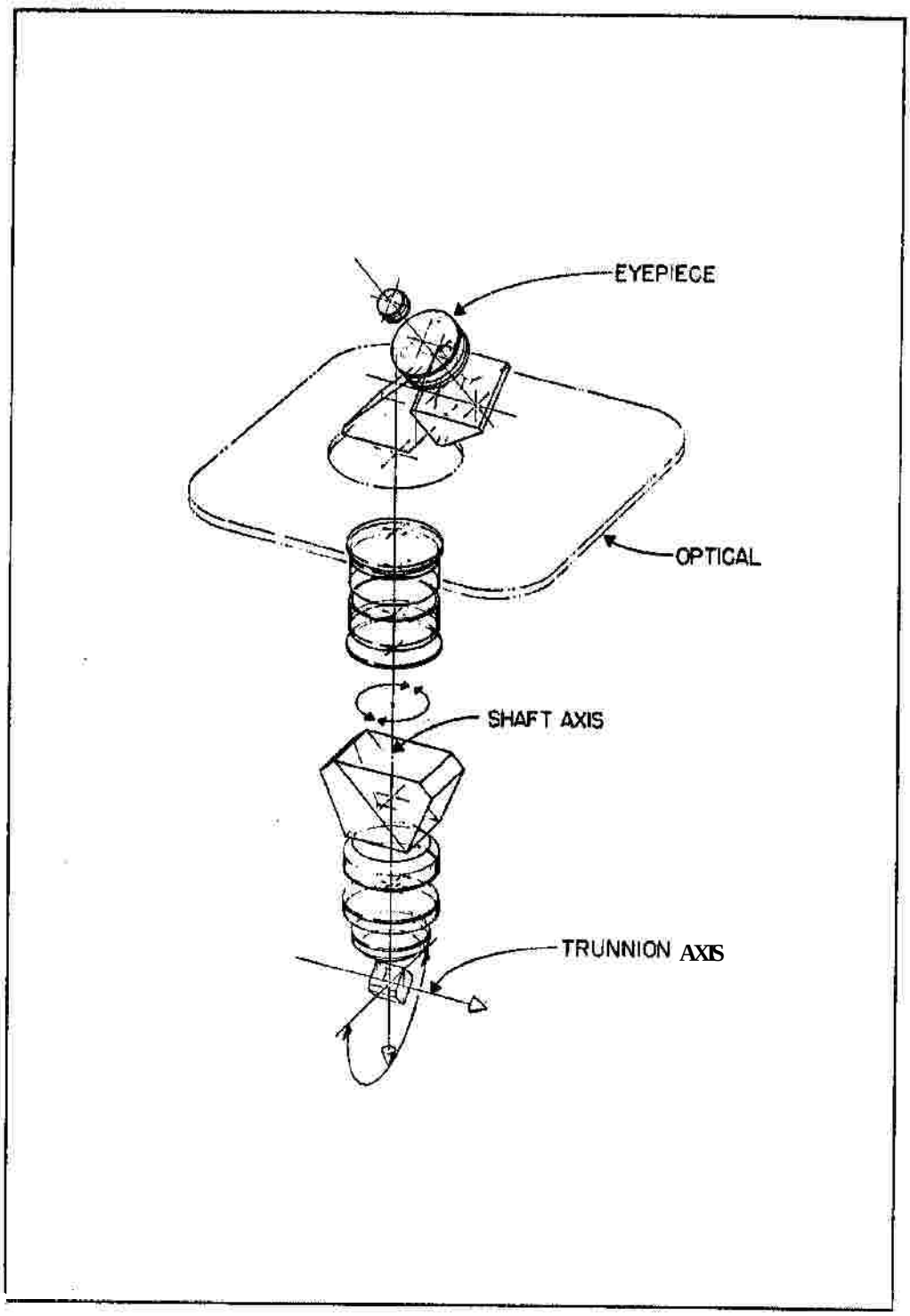

EYEPIECE
OPTICAL
SHAFT AXIS
TRUNNION AXIS

Fig.

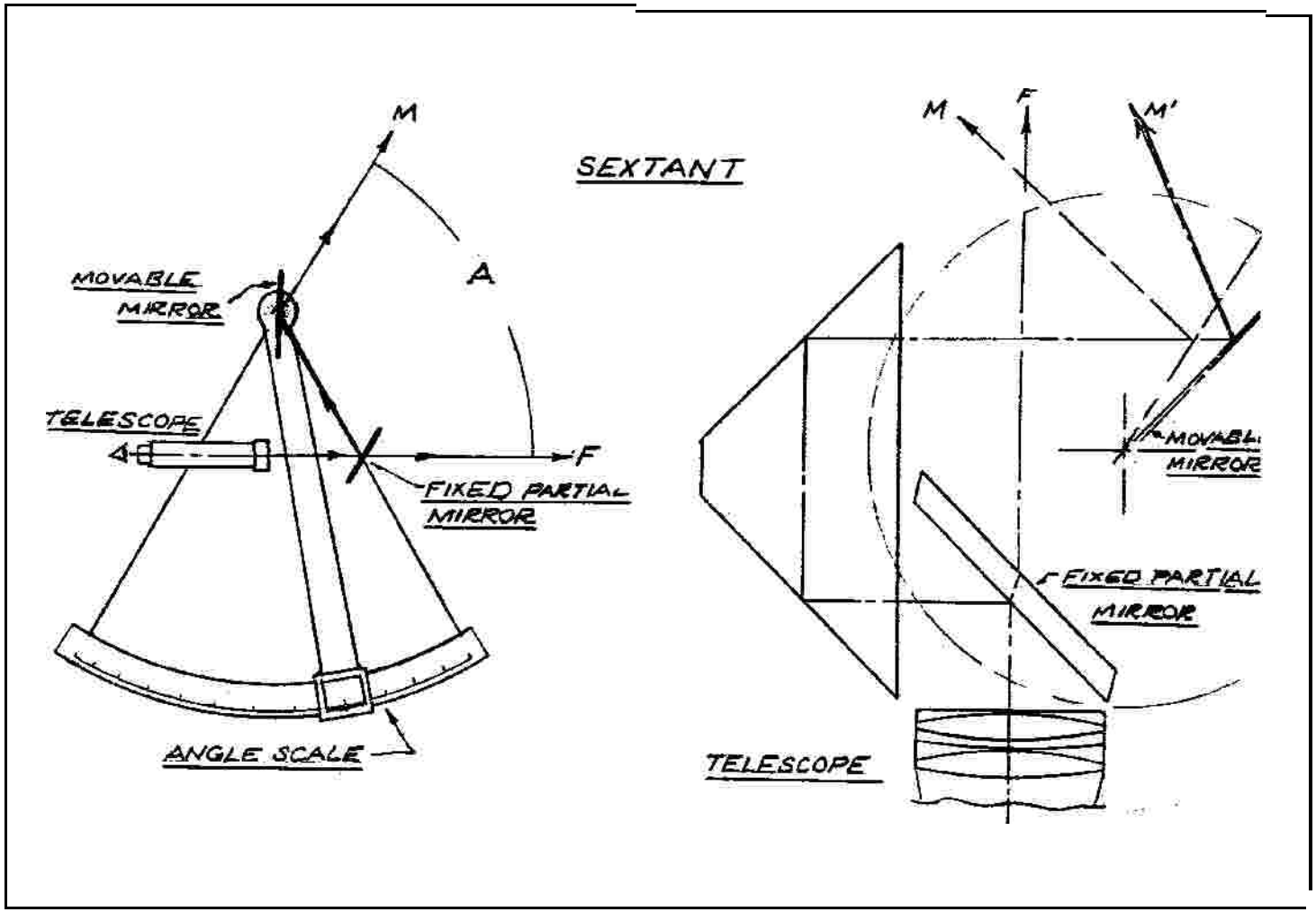
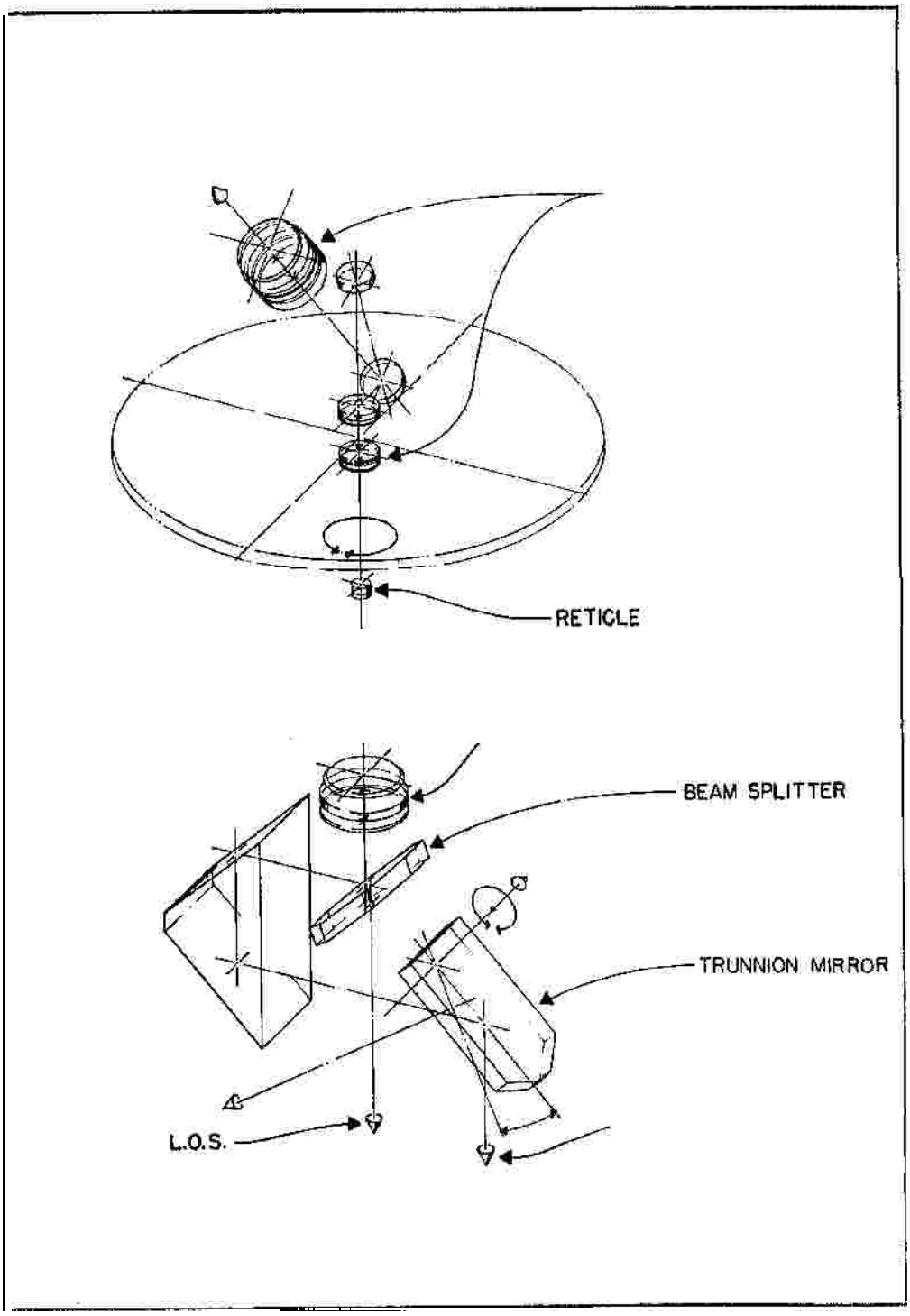


Fig. 7-8 Sextant (Apollo with nautical sextant).


RETICLE
BEAM SPLITTER
TRUNNION MIRROR
L.O.S.

or

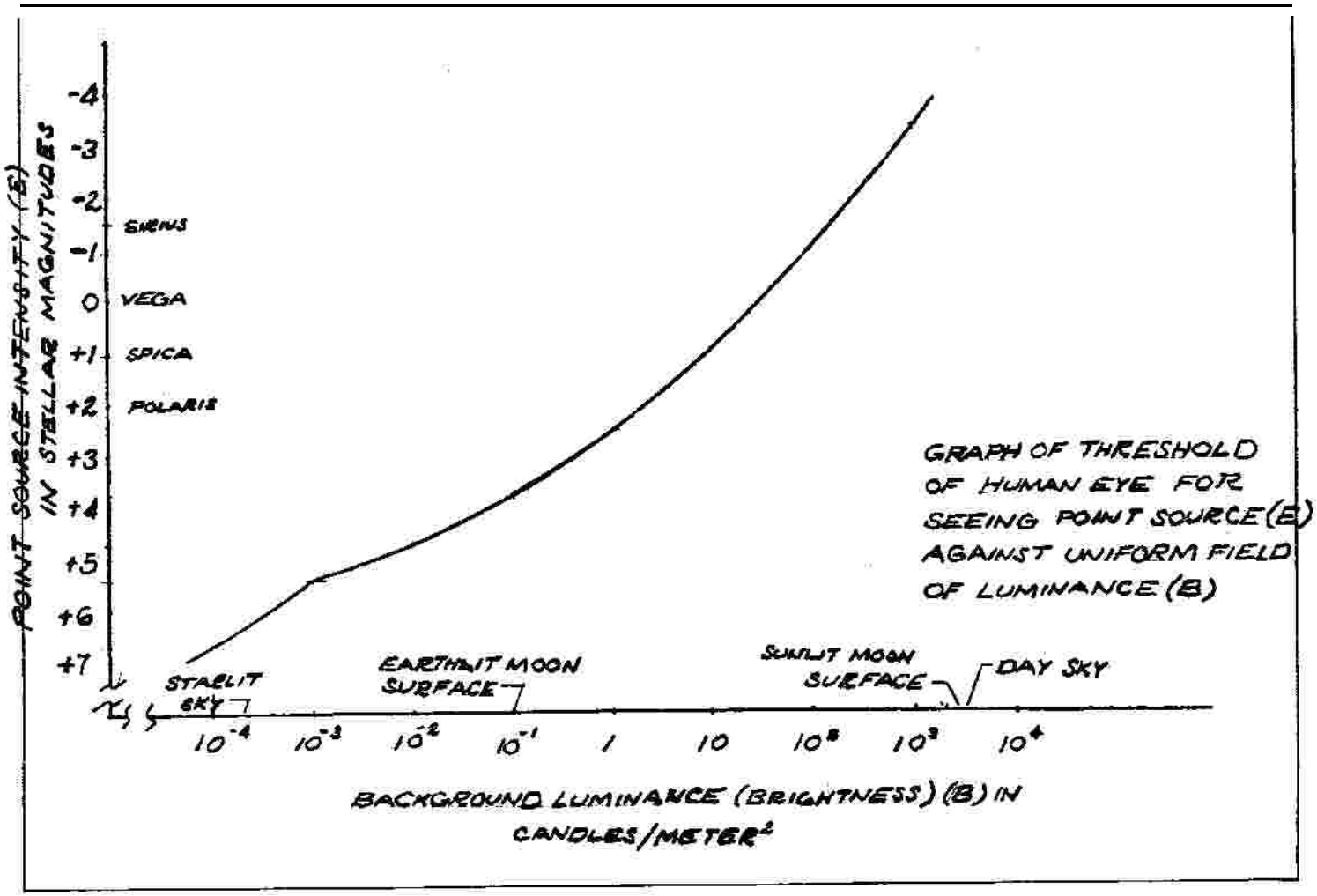


Fig. 7-10 Graph of threshold of human eye for seeing point source (E) against uniform field of luminance (B).

C.

War

(-4^{m})

As

0. 02

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