## BY STARLIGHT AND MOONLIGHT WITH THE WARNER & SWASEY PRISM TERRESTRIAL TELESCOPE; SOME EASY ASTRONOMICAL OBSERVATIONS

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By starlight and moonlight with the Warner & Swasey prism terrestrial telescope; some easy astronomical observations by Cleveland Warner and Swasey company

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### **CLEVELAND WARNER AND SWASEY COMPANY**

## BY STARLIGHT AND MOONLIGHT WITH THE WARNER & SWASEY PRISM TERRESTRIAL TELESCOPE; SOME EASY ASTRONOMICAL OBSERVATIONS



# BY STARLIGHT and MOONLIGHT

With the Warner & Swasey
Prism Terrestrial
Telescope .....

Some Easy Astronomical Observations

( · )

The Warner & Swasey Company CLEVELAND, OHIO

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Copyright, 1909, by The Warner & Swasey Co. Cleveland, Ohio "It adds a precious seeing to the eye."

—Shakespeare: Love's Labour's Lost.



THE WARNER \* SWASEY PRISM TERRESTRIAL TELESCOPE

Complete with

ALT-AZIMUTH MOUNTING, FOLDING TRIPOD

AND CARRYING CASE



### The Warner & Swasey Prism Terrestrial Telescope



This Porro Prism instrument represents the highest development in Terrestrial Telescopes. Its relation to the ordinary telescope is the same as that of our Prism Binocular to the old type of field-glass. It is remarkable for its large field,

Path of Light through the Perce Prisons field-glass. It is rema brilliant illumination and clear definition.

The objective is 2 inches in diameter, clear aperture. Two eye-pieces are provided, magnifying respectively 25 and 50 diameters. The telescope tube and the alt-azimuth mounting are made of aluminum. The folding tripod is of carefully selected ash. All are contained in a neat leather-covered carrying case; total weight only twelve pounds. Weight of telescope with its tripod and mounting, apart from case, but six and a half pounds.

The high quality of its optical equipment, and the simplicity and adequacy of its mechanical provisions, make it superior to any similar telescope upon the market for the camper, the traveler, the motor-tourist, the surveyor, or the marksman upon the rifle-range. It is especially adapted for porch, seaside and general use.

While thus designed strictly as a terrestrial telescope, its purchasers have also found it of much interest and value in the field of amateur astronomy. It is not presented as-in the technical sense-an astronomical telescope; and yet its quality is so superior that its efficiency is actually greater than that of many larger astronomical telescopes heretofore offered to the public. The ease with which it can be moved from place to place in the observation of moon and stars, its sharp definition and breadth of field, combined with the precision and steadiness with which the instrument may be "pointed" and controlled, have brought many expressions of satisfaction from those who having first purchased it as a terrestrial telescope have subsequently tested it in their observations of celestial objects. To respond to the interest and the demand thus indicated, and to illustrate, for beginners, some of the simple astronomical uses of the Warner & Swasey "Prism Terrestrial," this little booklet has been prepared.

Our long experience in making "Optik Tubes" of all sizes, from the great Lick and Yerkes Telescopes to the Telescopic Gun Sights, Range Finders, Sextants, etc., used by the Army and Navy, especially qualifies us to develop from both a scientific and practical standpoint, the highest type of Porro Prism Telescope.

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### By Starlight and Moonlight

WITH THE WARNER & SWASEY PRISM TERRESTRIAL TELESCOPE

### Introductory

The beginner naturally asks, "What is there to see? What objects in the sky will my telescope reveal?" It will help toward an appreciation of what his little instrument will do for him, if we can first help him to understand some of the things which even the largest telescope—in direct proportion to its excellence—will not do for anyone.

There are results which are mathematically as impossible for an optical instrument as for a fine watch to tick seventy-five seconds to the minute. Your telescope cannot work well through a misty atmosphere, or through air heavy with cloudiness or smoke. It will not work well if you permit the steadiness of your tripod to be affected by the winds, or if—when you place it on your porch—the floor on which it rests is shaken by heavy walking. Inasmuch as the atmosphere close to the earth is more subject to disturbance and impurity than the air a little higher up, your instrument will work better on objects at a slight altitude than on objects lying close to the horizon.

Yet even this two-inch instrument (modest indeed as compared to those largest telescopes of the world—the great instruments made by The Warner & Swasey Company for the Lick and the Yerkes Observatories) will give you gratifying results. There is a peculiar fascination in being easily able to point your instrument at a bright star and to find—perhaps to your surprise—that it is not a single star, but a "double" or a "triple." It is even more charming to be able to discern in a double star the contrasted colors of the components,—one, perhaps, being a golden yellow, the other a distinct blue or a delicate emerald.

A few of the coarser doubles may be divided by a field-glass, but everyone knows the difficulty in holding a field-glass steady; and the power commanded by this little telescope is so much greater than that available in a binocular that many doubles which