

TK₁ TELESCOPE & ASTRONOMY KIT

REFRACTOR 60/700

THAMES & KOSMOS

>>> KIT CONTENTS

What's inside your experiment kit:



Checklist: Find – Inspect – Check off

✓	No.	Description	Count
<input type="radio"/>	1	Aluminum stand with telescope cradle	1
<input type="radio"/>	2	Shelf for accessories	1
<input type="radio"/>	3	Telescope tube with dew shield and pitch arm for height adjustment	1
<input type="radio"/>	4	Viewfinder	1
<input type="radio"/>	5	Star diagonal (mirror diagonal)	1
<input type="radio"/>	6	Eyeiece (10 mm)	1
<input type="radio"/>	7	Eyeiece (20 mm)	1
<input type="radio"/>	8	Barlow lens	1
<input type="radio"/>	9	Image reversal lens (erecting lens)	1
<input type="radio"/>	10	Star-knob tighteners for securing the telescope in the cradle	2
<input type="radio"/>	11	Attachment screws for securing the legs of the stand	3
<input type="radio"/>	12	Moon filter	1

TIP!

Any parts that are not included with the kit are indicated in *italic letters* in the “You will need” sections.

You will also need:

Homemade red-light flashlight

Possibly: warm clothing for outside

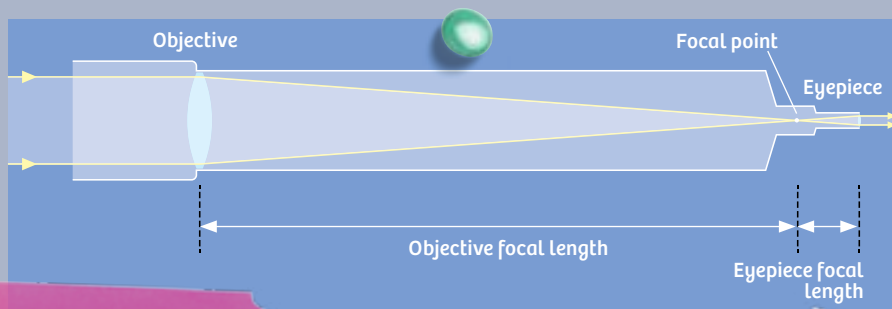
Optional: rotating star map (planisphere), star finder app

CHECK IT OUT



How Your Telescope Works

When we are in the dark, our pupils grow larger in order to take in (or gather) as much light as possible. That's exactly what a telescope does — it gathers light — with the main differences being that its “pupil” (the **objective**) is a lot larger than our pupils and the objective's diameter always remains the same. The light of an observation target enters the objective and is concentrated at the focal point. With the use of a second lens (the **eyepiece**) that functions like a magnifying lens, you can view the observation target's image created at the focal point.



Magnification

If you divide the objective focal length by the eyepiece focal length, it gives you the telescope's magnification. Bright observation targets, such as the Moon or planets, can handle greater magnification than fainter ones.

The Visual Field

When you look through the eyepiece, you can only see a very small portion of the sky. The greater the magnification, the smaller that portion will be. With **the viewfinder**, on the other hand, you can survey a relatively large area. That is why it's easier to orient toward the observation target with the viewfinder than with the telescope.

CHECK IT OUT



Ten Observations to Get You Started

Stars will always be points of light, no matter what kind of telescope or magnification you use. They are just too far away. But there are also the Moon, planets, binary stars, star clusters, galaxies, and nebulae — all highly worthwhile targets. Start by selecting an easy one like the Moon or a planet. The following ten suggestions are ideal choices for your first astronomical observations.

THE MOON

You can see craters, mountains, and lava-filled plains. It will astound you how many details you can make out. When the moon is full, you won't be able to see its features so well because they will only cast short shadows. The waxing or waning moon is better for watching through the telescope. Try a variety of magnifications.



SATURN

You will see a yellowing-white disk surrounded by a ring. You might also notice Saturn's brightest moon, Titan, which stands well off from the planet's disk and almost looks like a weak star. It changes its position from one night to the next. Use a high magnification. For more, see page 31.

