ASTROGIES

LOOK / DISCOVER / RECORD

English edition 2.2 | Illustrated handbook & workbook

Observing the Moon

Explore the Moon in 7 observing sessions

For beginners and amateur astronomers

44 pages | Visual essays | 5 fillable worksheets



What do you see on the Moon?

A landscape in changing light

The Moon produces no visible light of its own. Its bright surface reflects sunlight. Except during a lunar eclipse, roughly half the globe receives direct sunlight. From Earth, we see a changing portion of that illuminated half. This produces the phases; the ordinary phase cycle is not caused by Earth's shadow.

Three kinds of information

A lunar image contains information about the **surface**, the **illumination** and the **observing conditions** at the same time. A dark patch may be relatively dark terrain or a shadow. A blurred edge may originate in the atmosphere or your instrument. Describe shape and position before offering an explanation.

The same side, a different view

The Moon rotates once on its axis in approximately the time it takes to orbit Earth once. We therefore see largely the same side. The synodic month, from new Moon to new Moon, averages about 29.5 days. The orbital period relative to the stars is about 27.3 days. These are different periods.

Question about the view	What should you record?
Where am I looking?	A name or provisional label; position relative to recognisable neighbours.
What is visible?	Outline, brightness, shadow edge and texture, without untested interpretation.
Under what conditions?	Date, time, time zone, phase, instrument, magnification and image steadiness.
How certain am I?	Certain, probable or uncertain, with a reason for that assessment.

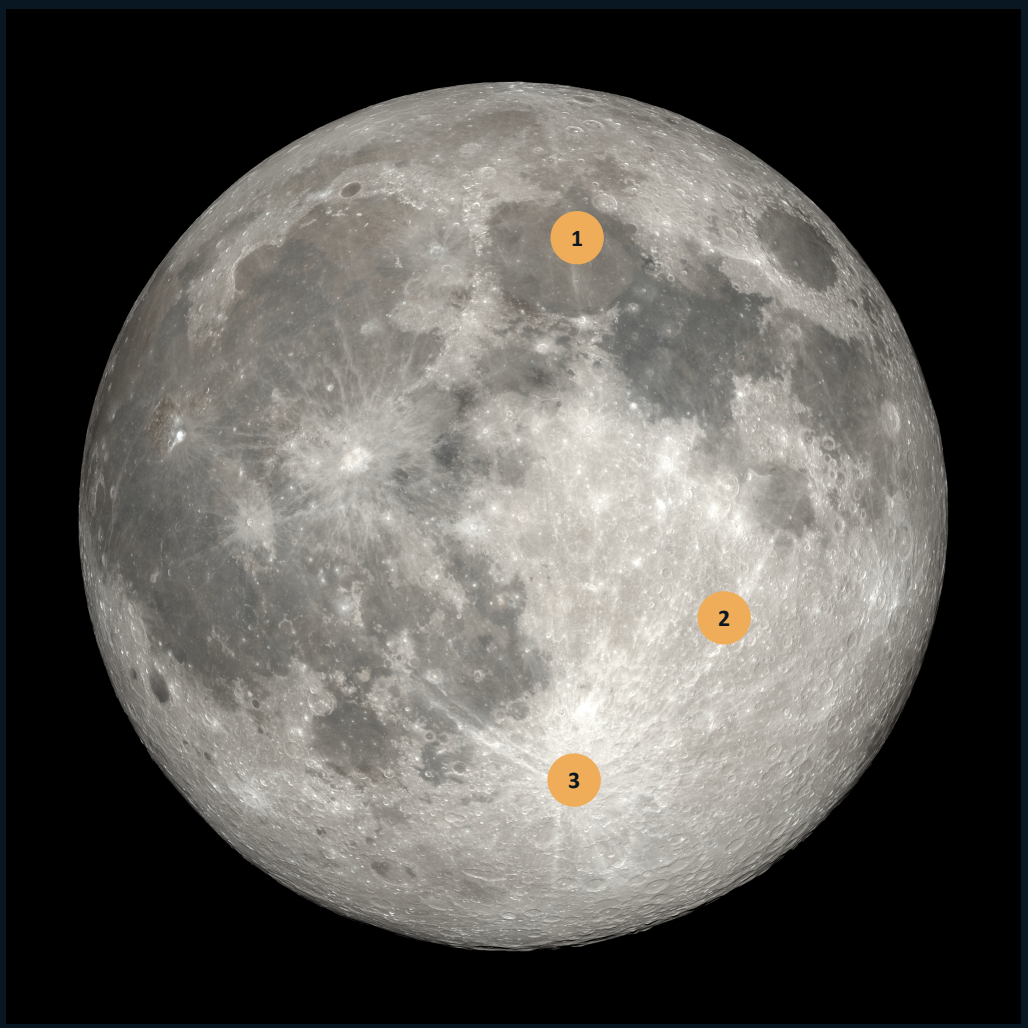
> **Observation versus interpretation**
>
> “A narrow dark strip along the inner rim” is a description. “The crater is very deep” is a conclusion that requires additional evidence. Keeping these separate makes your logbook much more useful later.

Sources: [1], [2] | Full references and observing tools on p. 38.

VISUAL ESSAY / THE BIG PICTURE

A world in shades of grey

Begin with the whole disc. Its pattern of bright and dark areas is your first guide.



1

Dark plains

Compare the large patches and their relative positions.

2

Bright highlands

Distinguish terrain from the effects of illumination.

3

Bright rays

Follow a ray; do not confuse it with a shadow.

Scientific full-Moon visualisation: NASA SVS / Ernie Wright, based on LRO data. Numbered annotations by AstroGies guide the reader; this is neither an eyepiece view nor a complete atlas.

Following the phases with a purpose

Turn separate views of the Moon into a comparable sequence.

EQUIPMENT Unaided eye; optional camera | TIME 10-15 minutes per observation | WORKSHEET p. 43

> **Observing question**
>
> How do the shape and orientation of the illuminated portion change between my observations?

Method

1. Choose one observing location and record the date, time, time zone and viewing direction. Begin by looking for a few minutes without a photograph or chart.

2. Draw the visible disc within a circle. Mark the illuminated side and terminator. The unlit part remains part of the globe. As the phase changes, the amount of the illuminated half visible from Earth changes.

3. After sketching, check whether the Moon is waxing or waning. If you copy an illuminated percentage from a tool, state that it is not your own measurement.

4. Repeat on at least three other occasions. Compare both the illuminated shape and its orientation in your view. Allow for differences in observing time.

What to record

Keep the phase description, time and one sketch for each observation. Also record occasions when cloud or an obstruction hid the Moon. Use approximately the same drawn disc diameter for comparison.

How to assess it

A change in orientation relative to your horizon is not the same as a change of phase. Describe separately what changed in the illuminated shape and what changed in its orientation.

Further investigation: Compare two observations at approximately the same phase in different cycles. Use a chart to assess possible viewing-angle differences without automatically attributing them to libration.

Source: [1] | Full references and observing tools on p. 38.

Session log

Record the question, conditions and outcome of one observing session.

Use a compatible PDF reader and save a copy, or print this sheet. Keep entries concise; write “unknown” where information is missing.

Session code / number

Date

Start and finish times + time zone

Location / viewing direction

Phase; waxing/waning; source

Instrument / eyepiece / magnification / filter

Cloud, image steadiness and other limitations

My observing question

Directly observed: shapes, positions and differences

Conclusion, confidence and a focused next step