

Shooting the Moon



The mystical moon, How do we do it?



What we'll cover

- Ways to snap pictures
- When to go out
- How to plan for different phases
- What equipment is needed
- What camera settings
- Connecting cameras
- 5 steps to prepare

Many ways to acquire moon shots

Camera Phone



Binocular Digiscoping



Spotter scope Digiscoping



Telescope Digiscoping



DSLR and Telephoto Lens



Prime focus moon imaging

- Using a camera, lens and tri-pod is a great way to get some great captures.
- The advantage is portability and accessibility
- Put together a back pack and light tri-pod and you can go just about anywhere.

Focal length/Zoom power



DSLR, 200mm telephoto lens

Harvest Moon



Earthshine: 300mm telephoto



Moonset: 500mm lens/dslr



DSLR / Telescope - Prime Focus



Advantages of prime focus Moon shots

- Much more detail visible
- Great way to study various moon features
- Stunning moon photos to share
- Photograph the planets

Prime focus 80mm, 480mm fl, 2 x
barlow = 960mm



This image is a crop of previous frame



This is a cropped single frame:
same image, Straight Wall



What Do I Need?



Memory card access light

DSLR Adapters



Remote Shutter release

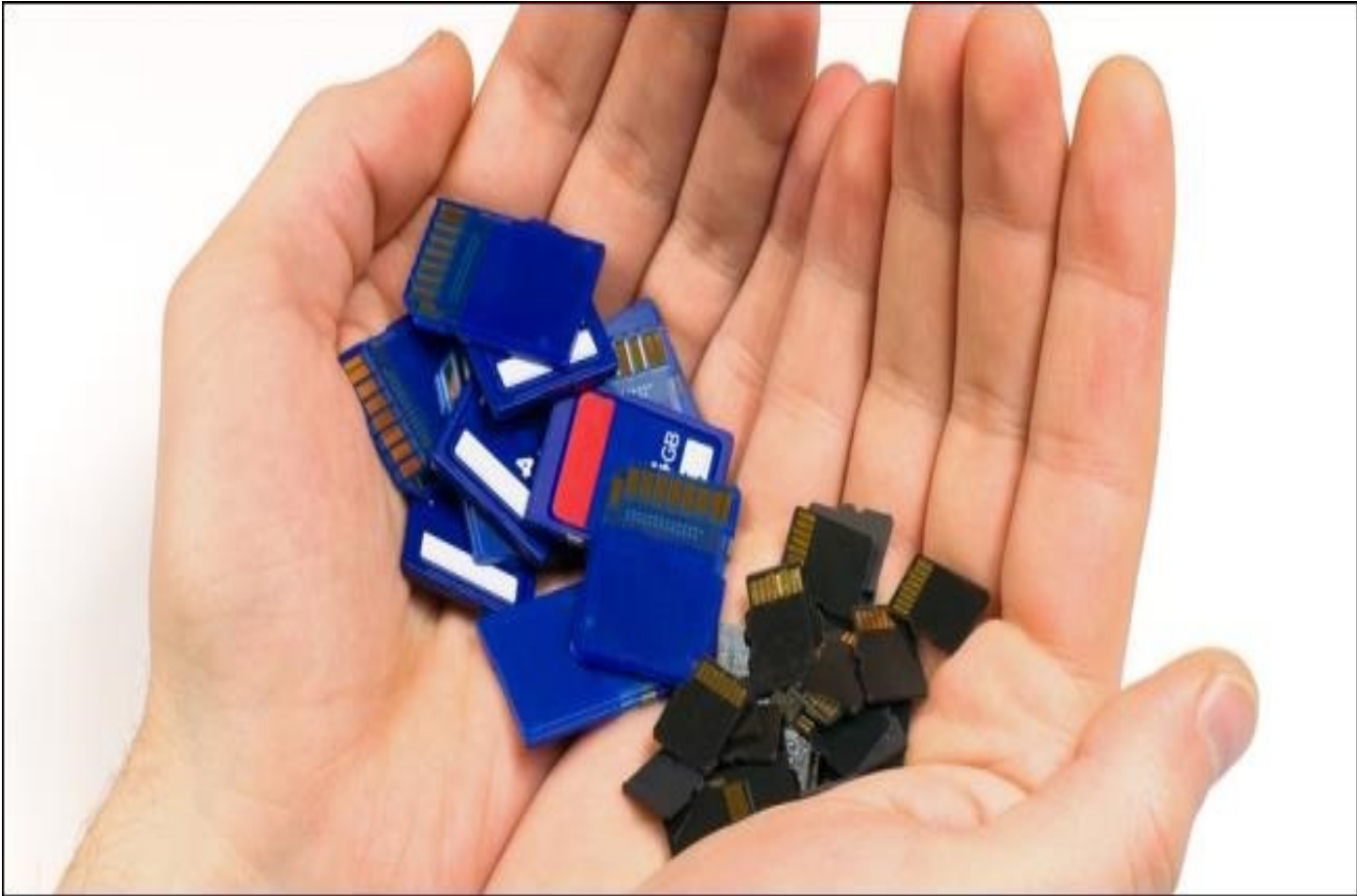


Stop the vibration

Solid Tri-pod



Know your SD card specs



What are the classifications

- There are four different speed classes — 10, 6, 4, and 2. 10 is the fastest, while 2 is the slowest. Class 2 is suitable for standard definition video recording, while classes 4 and 6 are suitable for high-definition video recording. Class 10 is suitable for “full HD video recording” and “HD still consecutive recording.”

Camera sensors

Sensor size comparisons for digital cameras.

PhotoSeek.com

For new **digital cameras**, a bigger **sensor area** captures better quality, but requires larger diameter, bulkier lenses. To **optimize** the size of a serious **travel camera**, consider **1-inch Type sensor** or up to **APS-C sensor size**.

Full-frame sensor (Nikon FX, Canon EF, Sony FE) = **36 mm wide**

"Full-frame 35mm" sensor / film size (36 x 24 mm) is a standard for comparison, with a **diagonal field-of-view crop factor** = 1.0

In comparison, a pocket camera's 1/2.5" Type sensor crops the light gathering by 6.0x smaller diagonally (with a surface area 35 times smaller than full frame).

APS-C Nikon DX, Sony E = **1.5x crop**

APS-C Canon EF-S = **1.6x crop**

Four Thirds 4/3" = **2x crop**

1" Type = **2.7x crop**

Sony RX10, RX100

1/1.7": **4.6x**

1/2.5":
6.0x crop

24 mm

"Medium format" size 48 x 36 mm

Compact & pocket zoom cameras have small, noisy sensors, tiny enough to extend superzoom lens reach.

APS-C sensor gathers 15 times more light (area) than a 1/2.5" Type sensor, and 2.4 times less than Full Frame.

Sensor Comparison

- *In the above illustration, compare digital camera sensor sizes: full frame 35mm, APS-C, Micro Four Thirds, 1-inch, 1/1.7" and 1/2.5" Type. For new digital cameras, a bigger sensor area captures better quality, but requires larger diameter, bulkier lenses. To optimize the size of a serious travel camera, consider 1-inch-Type sensor or up to APS-C sensor size. "Full-frame 35mm" sensor / film size (36 x 24 mm) is a standard for comparison, with a diagonal field-of-view crop factor = 1.0. In comparison, a pocket camera's 1/2.5" Type sensor crops the light gathering by 6.0x smaller diagonally (with a surface area 35 times smaller than full frame).*

Step 1

- **1. Find out the phase and pick the right date**
- Start by finding out when and where the moon will be visible in the night sky, and also how much of it will be lit by the sun (the area known as the phase). You can readily find plenty of information about the times and positions of the moon's ascension and descent, along with its phases, on many meteorological websites.

Step 2

Zoom in close

- Once you've decided on a suitable time to shoot the moon, the technique is pretty straightforward. You'll need a lens of 300mm or longer to get it at a reasonable size in the frame. A tripod will keep your camera still, and a remote shutter release will reduce shaking further - if you don't have one, set the camera's self timer to a few seconds in the Setup menu.

Set Camera to Manual

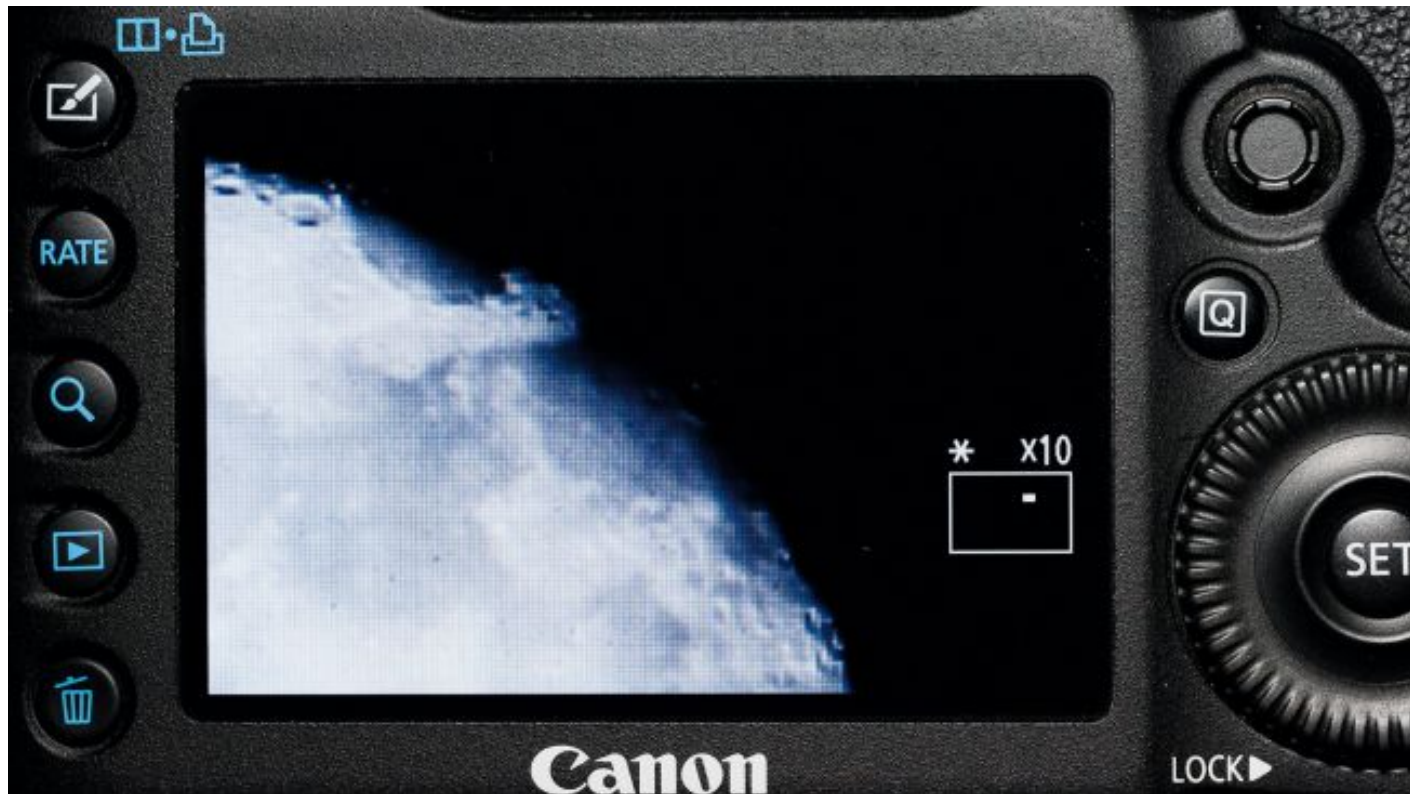


Step 3

Get set up

- Switch your camera to Manual mode and your lens to manual focus. Your exact exposure will vary according to the conditions, but in manual exposure mode start with ISO 400-800, a shutter speed of 1/250 sec and an aperture of f/5.6.-f/11. Adjust the ISO or aperture until you can see detail clearly in the surface. Avoid using a slower shutter speed as you tweak the settings. This will result in the moon blurring.

Set ISO, F stop, Shutter Speed



Shoot in RAW for best results

Make the moon bigger for focus



Use the 5x then 10x zoom on your camera

Step 4

Focusing

The moon won't fill the frame, so judging focus can be an issue. The best way to focus is to use Live View mode, then zoom in and carefully manually focus on the moon's surface.

Step 5

- When you're deciding when to shoot the moon, it's also worth remembering that it isn't always the same distance from the earth. Its orbit is elliptical, so this distance varies at different times. When there's a full moon that's closer than around 220,000 miles (360,000km) from the earth, this is known as a super moon. The difference in size and brightness between a super and a micro moon isn't huge, but even a small change can make a difference to your shots.

Mount the Camera and focus



Variable Polarizing Moon Filter



Comes in 1.25 and 2"

Take a shot like this



How Fast?

- **Speed Class**
- RELATED ARTICLE
- [What is Camera Raw, and Why Would a Professional Prefer it to JPG?](#)
- In a nutshell, not all SD cards offer the same speeds. This matters for some tasks more than it matters for others. For example, if you're a professional photographer taking photos in rapid succession on a [DSLR camera](#) saving them in [high-resolution RAW format](#), you'll want a fast SD card so your camera can save them as quickly as possible. A fast SD card is also important if you want to record high-resolution video and save it directly to the SD card. If you're just taking a few photos on a typical consumer camera or you're just using an SD card to store some media files on your smartphone, the speed isn't as important.