

When are good times to see venus and mercury?

Thought for 5s

**Venus and Mercury, as inferior (inner) planets, are best seen around twilight—either shortly after sunset (as evening "stars") or before sunrise (as morning "stars")—because they never stray far from the Sun in the sky.** [starwalk.space](#)

Their visibility depends on *elongation* (angular distance from the Sun), with greatest elongation marking peak viewing windows. Venus is much brighter and easier to spot (often the brightest object after the Sun and Moon); Mercury is smaller, fainter, and trickier, usually requiring a clear horizon and good timing. [earthsky.org](#)

## Venus (the "Evening Star" or "Morning Star")

- **2026 Evening Apparition (current best period):** Venus reappeared in the evening sky around mid-February 2026 and is a brilliant fixture in the western sky through spring and summer. It reaches **greatest eastern elongation on August 15, 2026** (about 46° from the Sun), offering excellent post-sunset views. Peak brightness follows around mid-September. [earthsky.org](#)
  - **Best times now (late April 2026 onward):** Look west-northwest **30–60+ minutes after sunset**. It climbs higher through spring/summer, pairing nicely with stars like those in Taurus/Pleiades or planets like Jupiter. [space.com](#)
  - It remains visible until around mid-October before inferior conjunction (passing between Earth and Sun) on October 24. [horoscopes.astro-seek.com](#)
- **Morning Apparition:** After October, Venus quickly shifts to the predawn eastern sky and becomes prominent in November–December 2026 (and into early 2027). [mpm.edu](#)

Venus is unmistakable when visible—magnitude around -4—and can even cast shadows under dark skies.

## Mercury (the elusive one)

Mercury has multiple short apparitions per year, alternating morning/evening. Greatest elongations provide the best shots (18–28° from the Sun). [starwalk.space](#)

**Key 2026 windows** (best ones highlighted):

- **Evening (after sunset, west):** Late February (greatest eastern elongation ~Feb 19; strong for Northern Hemisphere) and June (around June 15). [mpm.edu](#) +1
- **Morning (before sunrise, east):** Early April (greatest western elongation April 3–4; good, especially Southern Hemisphere) and August (around Aug 2). Another in November. [science.nasa.gov](#) +1

**Right now (late April 2026):** Mercury is in a morning apparition, low in the east before sunrise. It was at greatest elongation around April 3; catch remnants or planet groupings (with Mars/Saturn) around mid-to-late April ~30–45 minutes before dawn, though it's challenging in the Northern Hemisphere due to the ecliptic angle. [astronomy.com](#)

**General tips for both:**

- Find a spot with a clear, unobstructed horizon (no buildings/trees, ideally over water or fields).
- Use binoculars for Mercury or faint views; avoid looking at/near the Sun.
- Check local apps (e.g., Stellarium, SkySafari) or sites like [timeanddate.com](#) or [in-the-sky.org](#) for exact rise/set times and altitudes based on your location.

- Twilight timing: ~20–60 minutes after sunset or before sunrise works best—earlier/later as they move.
- Planetary parades (e.g., Feb 28 or April 2026 groupings) can make spotting easier. [nasa.gov](https://nasa.gov)

Visibility varies by latitude (better in tropics for Mercury due to steeper ecliptic) and weather. Venus is forgiving year-round during its apparitions; Mercury rewards patience during its brief peaks. Enjoy the shows!

Explain planetary elongation

Other inner planets visibility

OK, so, if Mercury and Venus are in the inner revolution ring around the sun, wouldn't that mean that, at best, Venus and Mercury should only be seen at brief moments at twilight or rising sun because the dark side of earth is pointing away from this inner ring... so how can Mercury and Venus be high in our sky, at night and yet be the two inner most planets circling the sun?

Thought for 38s

**Great question—this gets right to the heart of why inferior planets (Mercury and Venus) behave differently from the outer planets!** You're spot on that their orbits are inside Earth's ("inner revolution ring"), which is exactly *why* they can't appear high in the middle of the night sky like Mars, Jupiter, or Saturn sometimes do. Let me clear up the confusion step by step.

The dark side of Earth (the night side) *does* face away from the Sun—that's why it's dark. But the inner planets are always orbiting *near* the Sun in our sky, never getting far from it. So when you're on Earth's night side looking "straight out" into deep space (away from the Sun), you're looking in the wrong direction to see Mercury or Venus at all. They only become visible when you're looking *somewhat toward* the Sun's direction—i.e., during twilight, right after sunset (evening sky) or right before sunrise (morning sky).

### Why they appear "high" but only near twilight

- Their maximum separation from the Sun (called **greatest elongation**) is limited: about **28°** for Mercury and **47°** for Venus. [earthsky.org](https://earthsky.org) +1
- At greatest elongation, the geometry is like this: the line from Earth to the planet is *tangent* to the planet's orbit (a right angle at the planet). This puts them as far sideways from the Sun as possible. [researchgate.net](https://researchgate.net) +1

Here's a clear diagram of the orbital positions:

(These show eastern elongation = visible in the evening after sunset; western elongation = visible in the morning before sunrise.)

When the Sun has just dipped below the horizon (twilight), Venus (especially) can still be **30–45° high** in the western sky—quite prominent and "high up" for a while. Earth's rotation (15° per hour) keeps it above the horizon for 2–4 hours after sunset, depending on your latitude and the season. So yes, you can see it well into the evening, sometimes even late enough that the sky is fully dark... but it always sets long before midnight. Same idea in the morning sky. [astronomy.stackexchange.com +1](#)

They are **never** visible at true midnight (opposite the Sun in the sky) because that would require 180° elongation, which is impossible for inner planets. [vaia.com +1](#) (There are *extremely* rare exceptions at very high latitudes near solstice when Venus skims the northern horizon at midnight, but it's low and not the "high in the sky" experience you're picturing.)

## Quick visual of the Sun-Earth-Venus geometry at key points

This one shows the full cycle with phases:

[skyandtelescope.org](#)

In short: the "inner ring" doesn't hide behind the night side—it's right next to the Sun, so we only catch glimpses of it when the Sun is low or just gone. That's why they're called the "evening star" or "morning star." Outer planets can swing all the way around to the opposite side of the sky (opposition) and shine all night long. Mercury and Venus can't.

If you're observing right now (late April 2026), Venus is nicely placed in the evening sky after sunset—check a sky app for your exact times and altitude. The diagrams above should make the orbits click visually! Let me know if you want more details on current positions or how to spot them.

Explain planetary elongations further

Compare with outer planets

How is it that people have seen Venus as a crescent through a telescope after the sun sets?

Thought for 9s

## Venus shows a crescent phase through a telescope after sunset because of its position in its orbit relative to Earth and the Sun—exactly like how we see a crescent Moon. en.wikipedia.org

As an inferior planet orbiting inside Earth's path, Venus displays the full range of phases (new, crescent, quarter/half, gibbous, full) over its ~584-day synodic cycle, just as Galileo observed centuries ago. These phases are only visible in a telescope or good binoculars because Venus appears small (its disk spans just 10–60+ arcseconds). physics.ucla.edu

### Why crescent specifically after sunset (evening sky)

- **Crescent phases occur when Venus is relatively close to Earth and near the Sun in our sky** (approaching or just after inferior conjunction, when it passes between Earth and Sun).
- In the **evening apparition** (eastern elongation side):
  - After greatest eastern elongation (when it's ~half-illuminated and highest/farthest from the Sun), Venus starts swinging back toward the Sun in our sky.
  - It appears as a **waning (thinning) crescent**—larger in apparent size but with less and less of its sunlit side visible to us.
  - Even though it's getting closer to the Sun's position, Earth's rotation and the angular separation (up to ~47°) mean it remains visible for 1–3+ hours after sunset, low in the west, while the sky darkens enough for **telescopic viewing**. astronomy.stackexchange.com +1

The sunlit portion of Venus is always the side facing the Sun. When Venus is offset to the side (not perfectly aligned), we see only a sliver of that lit hemisphere—like a crescent Moon shortly after new Moon. space.com

Here's the geometry for the evening sky cycle:

skyatnightmagazine.com

explainingscience.org

earthsky.org

(These show how the illuminated fraction changes with orbital position; crescent appears low in the evening sky as it nears inferior conjunction.)

### Practical viewing

- **Best for crescents:** Weeks/months *after* greatest elongation, as Venus lowers toward the horizon but grows dramatically in size (thinner but bigger crescent). It's often brightest around this time due to the combination of closeness and illuminated area. en.wikipedia.org
- Observe in twilight (soon after sunset) when the sky is still somewhat bright—this reduces glare from Venus's brilliance and makes the phase easier to see. physics.ucla.edu
- Real telescopic views look like this:

skyandtelescope.org

skyanightmagazine.com

This is possible precisely *because* Venus is an inner planet—its orbit allows these changing angles that outer planets don't show. The "inner ring" geometry we discussed earlier enables it: we're seeing the planet while it's still on our side of the Sun, just not directly in front of it. [en.wikipedia.org](https://en.wikipedia.org)

Right now in late April 2026, Venus is in its evening apparition and likely showing a gibbous or thickening phase, but it will transition to a beautiful large crescent later in the year before inferior conjunction in October. Grab a small telescope or binoculars and check during twilight—you'll see it for yourself!

Explain Venus's synodic cycle details

Compare to Mercury's phases

OK, so, if the sun is setting in the west (April 2026), and if Venus is between the sun and the earth at this time, how can the full face of venus (shimmering full circle light) be seen from earth with my Nikon P1000 camera last night?

Thought for 8s

**Venus is *not* between the Sun and Earth right now (April 2026).** That's the key point resolving your observation.

Venus is currently in its **evening apparition**, on the *far side* of its orbit from us—closer to **superior conjunction** (which happened earlier in 2026) than to inferior conjunction (October 24, 2026). At this stage, the Sun illuminates almost the entire face of Venus that we can see, so it appears as a **nearly full or gibbous disk** (around 88–93% illuminated in late April). [skyanightmagazine.com](https://skyanightmagazine.com)

## Orbital Geometry Explained

- **Superior conjunction** (Venus on the far side of the Sun): We see its fully lit side → "full" or gibbous phase.
- **Inferior conjunction** (Venus between Earth and Sun): We see mostly its dark side → thin crescent (or invisible at exact conjunction).
- In April 2026, Venus is still relatively far from Earth, on the outer part of its orbit, so the angle lets us see most of its sunlit hemisphere. It will slowly shift to a gibbous → half → large crescent as it approaches us and the Sun later this year. [space.com](https://space.com)

Here's the phase cycle diagram:

earthsky.org

## What You Saw with the Nikon P1000

Your camera's powerful zoom (up to 3000mm equivalent) can easily resolve Venus as a tiny but distinct disk, especially in twilight when the sky isn't fully dark. The "shimmering full circle" is the **gibbous phase**—almost round and bright, with a tiny dark sliver on one edge that's hard to notice without steady high magnification or perfect conditions. Atmospheric turbulence often makes it shimmer or boil. [skyatnightmagazine.com](https://www.skyatnightmagazine.com)

Real telescopic/cameraphone views of Venus in this phase look like this (nearly full/gibbous):

space.com

Venus right now sets 2–2.5+ hours after the Sun, so you caught it well after sunset but while still high enough in the west for a clear view. [skyatnightmagazine.com](https://www.skyatnightmagazine.com)

## Quick Summary of 2026 Phases for Venus (Evening Sky)

- **Now (April):** Gibbous, ~90% lit, smaller disk.
- **August (greatest elongation):** About half-illuminated.
- **September:** Brightest, thinning crescent.
- **Late September/October:** Huge, thin crescent before inferior conjunction. [space.com](https://www.space.com)

Your Nikon P1000 photo is a classic early-evening view of Venus! If you have the image or more details (date, time, location), I can help refine the exact phase. Keep observing—it will change dramatically over the coming months. Great catch!