

Ursa Minor

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Ursa Minor

Ursa Minor, the Little Bear, is a small, faint constellation famous for one thing: it holds **Polaris**, the current pole star, sitting almost exactly where Earth's axis points. The **Little Dipper** — the popular name for its seven-star outline — is a smaller, dimmer echo of the Big Dipper in [Ursa Major](#), with Polaris at the tip of the handle instead of buried in the bowl. Polaris itself is bright enough to find easily (magnitude 1.98, comparable to the stars of the Big Dipper); the rest of the Little Dipper is not. Four of its other six stars are magnitude 4 or fainter, genuinely difficult from anywhere with streetlights nearby. Plan to look for the shape from a dark site, or accept that you may only ever pick out Polaris, Kochab and Pherkad from town.

A common misconception is worth clearing up here: Polaris is not the brightest star in the sky. It is not even particularly bright — only the 48th-brightest star, comparable to the stars of the Big Dipper. What makes it useful has nothing to do with its brightness and everything to do with its position.

Finding it

Use [Ursa Major](#)'s pointer stars: draw a line through Dubhe and Merak, the front two stars of the Dipper's bowl, and extend it about five times their separation. It lands on Polaris. Once you have Polaris, Kochab and Pherkad — the "Guardians of the Pole" — are the two brightest stars completing the bowl of the Little Dipper, roughly a third of the way from Polaris toward the handle of the Big Dipper.

Ursa Minor is circumpolar from Columbus with no edge cases to worry about: every star in it sits at declination 71° or higher, comfortably inside the 50° threshold that applies at 40°N. (See [Ursa Major](#) for how that threshold is worked out, and for the one Dipper star that actually grazes it.) Because Polaris sits so close to the pole itself, the whole figure barely appears to move — it is less a shape that rises and sets in the usual sense than a fixed hub the rest of the sky visibly turns around over the course of a night.

The stars

RA and Dec below are J2000, matching the values the site's own chart is built from.

Star	RA (h)	Dec (°)	Ma g	Dista nce	Spectral type	Name meaning
Polaris (?)	2.53 0	89.2 6	1.9 8	~433 ly	F7 Ib, yellow supergiant	Latin, "of the pole"; first printed as <i>stella polaris</i> in a 1492 edition of the Alfonsine Tables
Kochab (?)	14.8 45	74.1 6	2.0 7	130.9 ly	K4 III, orange giant	Arabic, probably from <i>farqad</i> , "calf" — one of "the two calves" with Pherkad
Pherkad (?)	15.3 45	71.8 3	3.0 0	487 ly	A2/A3 giant, white	Arabic <i>farqad</i> , "the dim one of the two calves"

Yildun (?)	17.5 37	86.5 9	4.3 5	172 ly	A1 V, blue-white dwarf	Turkish <i>y?ld?z</i> , "star" — a name that arguably fits Polaris better than this faint neighbor
Zeta UMi	15.7 35	77.7 9	4.2 9	369 ly	A3 Vn, blue-white dwarf	No traditional proper name; an unusually fast rotator, spinning at roughly 210 km/s
Eta UMi	16.2 92	75.7 5	4.9 5	97.6 ly	F5 V, yellow-white dwarf	No traditional proper name
Epsilon UMi	16.7 66	82.0 4	4.2 1	~300 ly	G5 III + A8–F0 V, binary	No traditional proper name

Polaris up close

Polaris is not one star but at least three: a yellow supergiant (Polaris Aa) with a close companion (Ab) in a tight orbit, itself in a wider orbit with a third star (Polaris B), which is faint enough to need a telescope. Polaris Aa is also a **Cepheid variable**, the nearest and brightest one known — a class of pulsating star whose period-brightness relationship is one of the basic tools for measuring distances across the universe. Polaris's own pulsation amplitude shrank steadily through most of the 20th century, to the point that some astronomers wondered whether it was shutting off entirely; recent measurements suggest that trend has reversed, with the pulsation period now shortening again. The likely explanation involves the gravitational tug of its close companion, but the details are still being worked out.

Myth and history

Greek sources disagree with each other about who this figure represents, which is itself worth noting rather than smoothing over. Aratus's *Phaenomena* (3rd century BCE) calls it **Kynosoura**, "dog's tail" — the origin of the English word *cynosure*, something that draws all attention. Hyginus's *Poetic Astronomy* names her as **Cynosura**, a nymph on Mount Ida in Crete who, with her companion Helike (identified with [Ursa Major](#)), nursed the infant Zeus in hiding from his father Cronus and was rewarded with a place in the sky. A separate tradition recorded by Apollodorus gives the two nurses different names, Adrasteia and Ida, with Ida rather than Cynosura tied to the Little Bear. Both versions agree on the shape of the story — two bear-nurses, one for each constellation — without agreeing on the names attached to it.

The more consequential ancient claim about this constellation is practical rather than mythological. The 3rd-century-BCE poet Callimachus wrote that **Thales of Miletus** (c. 625–545 BCE), reputedly of Phoenician descent, "measured out the little stars of the Wain by which the Phoenicians sail" — crediting him with teaching Greek sailors to navigate by the tighter, more consistent turn of Ursa Minor around the pole rather than by the wider swing of Ursa Major, following older Phoenician seafaring practice. Whether Thales invented the constellation or simply imported a technique already old by his time is unclear from the surviving fragments, but the underlying fact holds regardless of attribution: a smaller circle around the pole is a steadier bearing than a bigger one, which is exactly why Kochab and Pherkad earned the name "Guardians of the Pole" in later Western tradition — for most of the last five thousand years, no bright star sat exactly at the pole, and sailors and surveyors used the swing of these two to bracket it.

Chinese astronomy organizes this same region differently but toward a comparable purpose. The **Ziwei** ("Purple Forbidden") enclosure is the northern circumpolar zone of the traditional Chinese sky, treated as the residence of the celestial emperor, with **Beijí** ("North Pole") as its symbolic and literal center. It is a different sky-culture arriving at the same functional idea as the Western pole star and its guardians: a fixed point near which the rest of heaven visibly turns, worth naming and watching for exactly that reason.

Deep sky

Ursa Minor is the least rewarding of these four constellations for a telescope, and it is worth saying so plainly rather than padding the list. Its faintest catalogued objects — **NGC 6217**, a barred spiral galaxy at magnitude 13.9, and **NGC 6251**, a giant elliptical galaxy known among radio astronomers for one of the largest jets ever imaged, at magnitude 13.5 — both need a large amateur telescope (14 inches or more) and a genuinely dark sky to show anything at all. This constellation's interest is positional, not photogenic.

Key dates

Date	Event
c. 625–545 BCE	Thales of Miletus, per Callimachus, introduces or popularizes navigation by Ursa Minor among Greek sailors, following Phoenician practice.
3rd century BCE	Aratus names the constellation Kynosoura in the <i>Phaenomena</i> .
c. 150 CE	Ptolemy catalogues Ursa Minor among the 48 constellations in the <i>Almagest</i> .
1492	"Stella polaris" appears in print for the first time, in a Venice edition of the Alfonsine Tables.
1930	The IAU fixes the modern constellation boundaries.
present	Polaris continues closing on the north celestial pole, with closest approach expected around 24 March 2100 CE, before it begins to recede. See Draco for the pole star that came before it, and how precession works.

Related

- [Ursa Major](#) — its pointer stars aim straight at Polaris; the fuller explanation of circumpolar visibility from Columbus lives there.
- [Draco](#) — coils between the two Bears and holds Thuban, the pole star of roughly five thousand years ago.
- [Cassiopeia](#) — the other unmistakable circumpolar landmark, on the far side of the pole from the Dippers.