

Bootes

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Boötes

Boötes (bo-OH-teez), the Herdsman, is a tall, narrow figure — some see a kite, some an ice-cream cone — anchored at its bottom point by Arcturus, the fourth-brightest star in the night sky and the brightest north of the celestial equator. It is one of Ptolemy's original 48 constellations. From Columbus, Ohio (about 40°N), it is a spring-into-summer evening object: it climbs the eastern sky through winter's end, rides high in the south on spring and summer evenings, and sinks into evening twilight by early autumn.

Finding it

The star-hop is the most reliable one in the whole sky: find the Big Dipper (the bright asterism in Ursa Major), and follow the curve of its handle — Alkaid, through Mizar, through Alioth — outward past the end of the handle. That same arc, continued, lands on a noticeably orange-tinted star: Arcturus. The mnemonic is "arc to Arcturus," and it works from any dark-enough sky where the Dipper is visible.

At Columbus's latitude, Arcturus culminates (crosses the meridian, its highest point) at an altitude of roughly 69° — high in the south, not overhead. Boötes is not circumpolar from here: every star in it rises and sets, and by early autumn it has slipped into the western twilight, not returning to the evening sky until the following spring. Best viewing is April through August, highest around 9–10 p.m. in June.

Muphrid sits close to Arcturus and marks the herdsman's foot; the rest of the kite fans out to the north from there, through the double star Izar, up to the fainter northern stars Seginus and Nekkar.

The stars

RA and Dec are J2000, matching the site's own sky chart, and are given exactly as supplied — this table does not round or correct them.

Star	Designation	RA (h)	Dec (°)	Magnitude	Distance (ly)	Spectral type	Name
Arcturus	? Boo	14. 26 1	19. 18 05	-0. 05	36.7 ly	K1.5 III	Greek <i>Arktouros</i> , "Guardian of the Bear"
Izar (Pulcherrima)	? Boo	14. 75 0	27. 07 35	2. 35	~21 0 ly	K0 giant + A2 dwarf, a close binary	Arabic <i>izar</i> , "the veil"; the companion name Pulcherrima, Latin for "loveliest," was given by the astronomer Friedrich Struve for the pair's colour contrast
Muphrid	? Boo	13. 91 2	18. 40 68	2. 68	37 ly	G0 IV	Arabic, "the single one of the lancer"
Seginus	? Boo	14. 53 5	38. 31 03	3. 03	85 ly	A7 III	of disputed origin — the name arrived through a chain of medieval Arabic-to-Latin transliteration and its original meaning is no longer settled
Princeps	? Boo	15. 25 8	33. 31 47	3. 47	120 ly	G8 III	Latin, "first" or "chief"

Nekkar	? Boo	15. 03 2	40. 39	3. 49	~22 0 ly	G-type giant	Arabic, "cattle driver" — itself a mis-transliteration of an older term
Rho Boötis	? Boo	14. 53 0	30. 37	3. 58	164 ly	K3–K4 III	carries no traditional proper name

Myth and history

Ancient sources do not agree on who Boötes is. Aratus's *Phaenomena* (c. 275 BCE) calls the figure *Arctophylax*, "Bear Watcher," and describes him driving the Great Bear around the pole with a staff — but Aratus does not commit to a single story behind the name. Later tradition offers at least two candidates: Arcas, son of Callisto, who was nearly made to kill his own mother after Hera turned her into a bear, and was set in the sky beside her as Boötes so the two would never meet in ignorance again; or Icarius of Athens, taught wine-making by Dionysus, murdered by shepherds who mistook their first drunkenness for poisoning — a story that also explains Virgo (his daughter Erigone) and Canis Minor (his dog) as a linked family of constellations. Ptolemy's *Almagest* (2nd century CE) simply describes the figure carrying a *kollorobos*, a club or staff, usually drawn since as a shepherd's crook.

Non-Greek astronomy treats this patch of sky differently rather than retelling the same herdsman under another name. In Chinese astronomy, Arcturus anchors Jiao (? , "Horn"), the first of the 28 lunar mansions and the starting benchmark of the whole Chinese lunar-mansion system — a role about timekeeping and measurement, not portraiture. Medieval Arabic astronomers, working independently of the Greek picture, named the individual stars rather than the figure: *izar* ("the veil") for the double star at Boötes's shoulder, an Arabic phrase meaning "the single one of the lancer" for the star at Arcturus's foot, a term for "cattle driver" — garbled in transmission into "Nekkar" — for the star at the kite's crown.

Arcturus itself carries two facts that have nothing to do with myth. In 1718, Edmond Halley compared its position to the ancient catalogue attributed to Hipparchus and Ptolemy and found it had shifted by about half a degree over roughly 1,850 years — the first demonstration that a "fixed star" moves. Arcturus's proper motion, at roughly 2 arcseconds a year, is larger than any other first-magnitude star's except Alpha Centauri's. And Arcturus is not a native of our part of the galaxy: it is old (an estimated 7–8 billion years) and metal-poor, consistent with an origin in the Milky Way's halo rather than its disk — possibly in a dwarf galaxy since absorbed. Rather than orbiting with the disk stars the way the Sun does, it is thought to be cutting through the galactic plane at a steep angle on a long elliptical orbit, having arrived in our neighbourhood roughly 500,000 years ago and due to leave it again in about another 500,000.

On the evening of 27 May 1933, Arcturus opened Chicago's "A Century of Progress" World's Fair. Astronomers at four observatories, including Yerkes, focused telescopes on the star and fed its light into photoelectric cells; the resulting current, sent by telegraph line, tripped the switch that lit the fairgrounds at 9:15 p.m. The choice was deliberate: the era's best distance estimate for Arcturus was about 40 light-years, which meant — as the story was told that night — the light arriving in Chicago had left the star around 1893, the year of the city's previous World's Fair. Arcturus's modern, better-measured distance of 36.7 light-years is close enough that the coincidence still roughly holds.

The Quadrantids

The Quadrantids are one of the year's strongest annual meteor showers, capable of 100-plus meteors an hour at a sharp, narrow peak — but that peak lasts only a few hours, so most years show only a fraction of the maximum rate. It falls in early January, and its radiant sits in the northern part of Boötes, near the border with Draco.

The shower is named for a constellation that no longer exists. In 1795 the French astronomer Jérôme Lalande introduced Quadrans Muralis, "the mural quadrant," a constellation commemorating the wall-mounted astronomical instrument, to fill an empty stretch of sky between Boötes and Draco. Meteor observers began noting the January shower radiating from it soon after, and the name "Quadrantids" was already in general use by the mid-1800s. When the International Astronomical Union fixed the modern 88 constellations and their boundaries in 1922, Quadrans Muralis did not make the list — its stars were absorbed back into Boötes and Draco. The meteor shower's name outlived its namesake anyway; the IAU made "Quadrantids" the shower's official designation in 2009 precisely because decades of use had already settled the matter.

Key dates

Date	Event
c. 275 BCE	Aratus's <i>Phaenomena</i> names the figure Arctophylax, Bear Watcher, without settling on a single myth behind it.
c. 150 CE	Ptolemy catalogues Boötes among the <i>Almagest</i> 's 48 constellations.
1718	Edmond Halley publishes the discovery of proper motion, using Arcturus (with Sirius and Aldebaran) as evidence that the "fixed stars" move.
1795	Jérôme Lalande introduces Quadrans Muralis in the gap between Boötes and Draco.
1825	The January meteor shower radiating from Quadrans Muralis is first described.
1922	The IAU's official 88 constellations omit Quadrans Muralis; its stars pass to Boötes and Draco.
27 May 1933	Arcturus's starlight, relayed through photoelectric cells, opens Chicago's Century of Progress World's Fair.
2009	The IAU formally adopts "Quadrantids" as the shower's name, retaining it despite the parent constellation's retirement.

Related

- [Corona Borealis](#) — the next figure east along the same evening sky.
- [Hercules](#) — further east and higher, prominent in summer.
- [Corvus](#) — reached by extending the same star-hop, "arc to Arcturus, then drive a spike to Spica," on toward the crow.
- [Leo](#) — the zodiacal figure that leads Boötes across the spring sky.