

Hercules

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Hercules

Hercules is large and faint — sprawling across a big patch of sky without a single star brighter than third magnitude, which makes it easy to walk past even though it takes up more room than showier neighbors. The one part of it that jumps out is the Keystone, a four-star trapezoid marking the kneeling figure's torso. It is one of Ptolemy's original 48 constellations. From Columbus, Ohio (about 40°N), it is a summer object, and an unusually well-placed one: its northern stars pass within a degree or two of straight overhead.

Finding it

The easiest route is off Vega, the brilliant blue-white star in neighboring Lyra and the anchor of the Summer Triangle: look about 15–20° west-northwest of Vega for four modestly bright stars forming a lopsided box, the Keystone. Coming from Boötes instead, follow the same general curve that carried you to Arcturus onward past Corona Borealis to the east.

At Columbus's latitude, the Keystone's northernmost star, Eta Herculis (declination +38.9°), culminates at an altitude of about 89° — essentially straight up. None of Hercules is circumpolar here, but on a July or August evening it is the closest thing on this list to directly overhead. Best viewing is June through September, nearest the zenith around 10 p.m. in July and August.

The stars

RA and Dec are J2000, matching the site's own sky chart, given exactly as supplied.

Star	Designation	RA (h)	Dec (°)	Magnitude	Distance (ly)	Spectral type	Name
Rasalgethi	? Her	17. 24 4	14. 39	3. 35	~360 ly	M5 Ib–II, a red supergiant/bright giant	Arabic <i>ra's al-jathi</i> , "head of the kneeler." A triple system and a pulsating (semiregular, SRc-type) variable, brightening and dimming by roughly a magnitude over a few months — the table's magnitude is one snapshot of a moving target.
Kornephoros	? Her	16. 50 4	21. 49	2. 77	139 ly	G7 III	Greek, "club-bearer"
Zeta Herculis	? Her	16. 68 8	31. 60	2. 81	35 ly	F9 IV subgiant	carries no traditional proper name; the nearest star in this figure, and a well-known close binary in small telescopes
Epsilon Herculis	? Her	17. 00 5	30. 93	3. 92	155 ly	A0 V	carries no traditional proper name
Pi Herculis	? Her	17. 25 1	36. 81	3. 16	377 ly	K3 II bright giant	carries no traditional proper name

Eta Herculis	? Her	16. 71 5	38. 92	3. 53	112 ly	G7.5 III	carries no traditional proper name
Delta Herculis	? Her	17. 25 0	24. 84	3. 12	75 ly	A3 IV	carries no traditional proper name

Zeta, Eta, Pi and Epsilon Herculis form the Keystone itself; Kornephoros and Delta hang off it as the shoulders, and the line runs on to Rasalgethi as the head.

Myth and history

The figure is older than its identity. Aratus's *Phaenomena* (c. 275 BCE) calls it simply *Engonasin*, "the Kneeler," and admits he does not know who it is meant to be or why he kneels — an unusually candid gap in a text that names nearly everything else with confidence. Only in later Hellenistic tradition is the kneeler firmly identified as Heracles, shown at the moment of one of his labors — accounts differ on whether it is his fight with the Ligurians or his standing on the head of the dragon Ladon while taking the golden apples of the Hesperides. The Arabic name for the head star, Rasalgethi ("head of the kneeler"), actually preserves the older, unattributed pose Aratus described, not the later Greek hero story layered onto it.

The region has no clean pre-Greek original. Unlike its neighbors, Hercules does not map onto a documented figure in the Babylonian compendium MUL.APIN; the sky here is comparatively empty in the surviving Mesopotamian star lists, and any older original behind the kneeling pose is speculative rather than attested. Chinese astronomy handles the same stars on entirely different terms: several of Hercules's fainter stars, combined with a few from neighboring Boötes, form the Seven Excellencies (??, *Qi Gong*), an asterism within the Heavenly Market Enclosure — one of the three great enclosures of traditional Chinese uranography, representing the counselors of the imperial court. Where the Greek tradition reads this patch of sky as a wrestling hero, the Chinese tradition reads part of it as a cabinet of ministers — a bureaucratic rather than heroic frame laid over some of the same stars.

Deep sky

M13, the Great Globular Cluster in Hercules (NGC 6205), sits on the western edge of the Keystone, about a third of the way from Eta to Zeta Herculis. It is a dense ball of several hundred thousand stars, roughly 145 light-years across, at a distance most commonly cited around 22,000–25,000 light-years. At magnitude 5.8 it is a genuine (if faint) naked-eye target under dark skies, an easy binocular smudge, and resolves into individual stars in a 6–8 inch telescope. Edmond Halley noted it in 1714; Charles Messier catalogued it in 1764.

On 16 November 1974, the Arecibo Observatory in Puerto Rico aimed its 305-meter dish at M13 and transmitted a three-minute signal at 2,380 MHz — the Arecibo message. It encoded 1,679 bits (a semiprime, 23×73 , chosen so a recipient could reconstruct the intended 23-by-73 grid) into a crude picture: the numbers one through ten, the key atoms of life, the structure of DNA, a human figure, our solar system, and a sketch of the Arecibo dish itself. The transmission marked the rededication of a telescope upgrade more than it represented a serious attempt at contact — and even taken at face value, it has a built-in irony: M13 is orbiting the galaxy, and by the time the signal completes its roughly 25,000-year trip, the cluster will no longer be where it was aimed. Anyone tracing the beam back to its source would find

empty sky.

The solar apex

The Sun is not sitting still. Relative to the average motion of nearby stars (the "local standard of rest"), the whole solar system is moving at roughly 20 kilometers per second toward a fixed point on the sky called the solar apex — and that point falls inside Hercules, at approximately right ascension 18h28m, declination +30°, just southwest of Vega. It is not marked by a bright star; it is simply a direction. Over tens of thousands of years, stars near that point in the sky drift slowly apart as we approach them, while stars near the opposite point, the antapex (in the far-southern constellation Columba, never visible from Ohio), appear to draw together behind us. It is a strange thing to know while looking at a kneeling hero: that patch of Hercules is, in a literal sense, the direction we are all headed.

Key dates

Date	Event
c. 275 BCE	Aratus's <i>Phaenomena</i> describes an unnamed kneeling figure, Engonasin, without identifying him.
c. 150 CE	Ptolemy catalogues Hercules among the <i>Almagest</i> 's 48 constellations.
1714	Edmond Halley records the globular cluster later catalogued as M13.
1764	Charles Messier adds the cluster to his catalogue as M13.
16 November 1974	The Arecibo message is transmitted toward M13.
30 June 2016	The IAU's Working Group on Star Names formally approves "Rasalgethi" for Alpha Herculis A.

Related

- [Corona Borealis](#) — the western neighbor, and the way back toward Boötes.
- [Boötes](#) — further west, reached by continuing the same arc from the Big Dipper.
- [Leo](#) — the zodiacal figure that opens this stretch of the spring-into-summer sky.