The Autumn Sky: The Northern Anchor

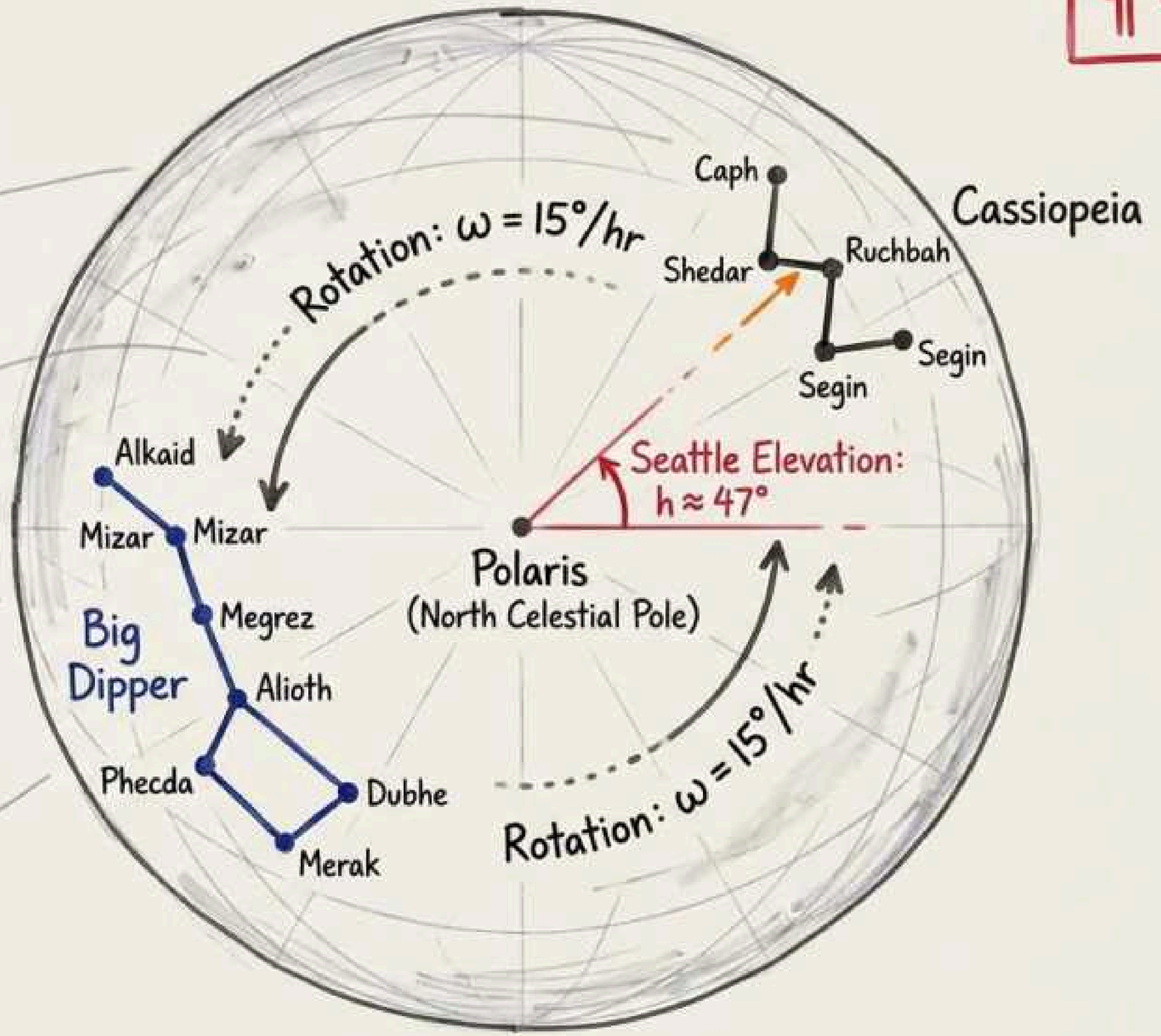
¶ 4.1

The Scene: Quieter than summer; fewer bright stars but excellent landmarks.

The Anchor: Cassiopeia (5 stars forming a W or M).

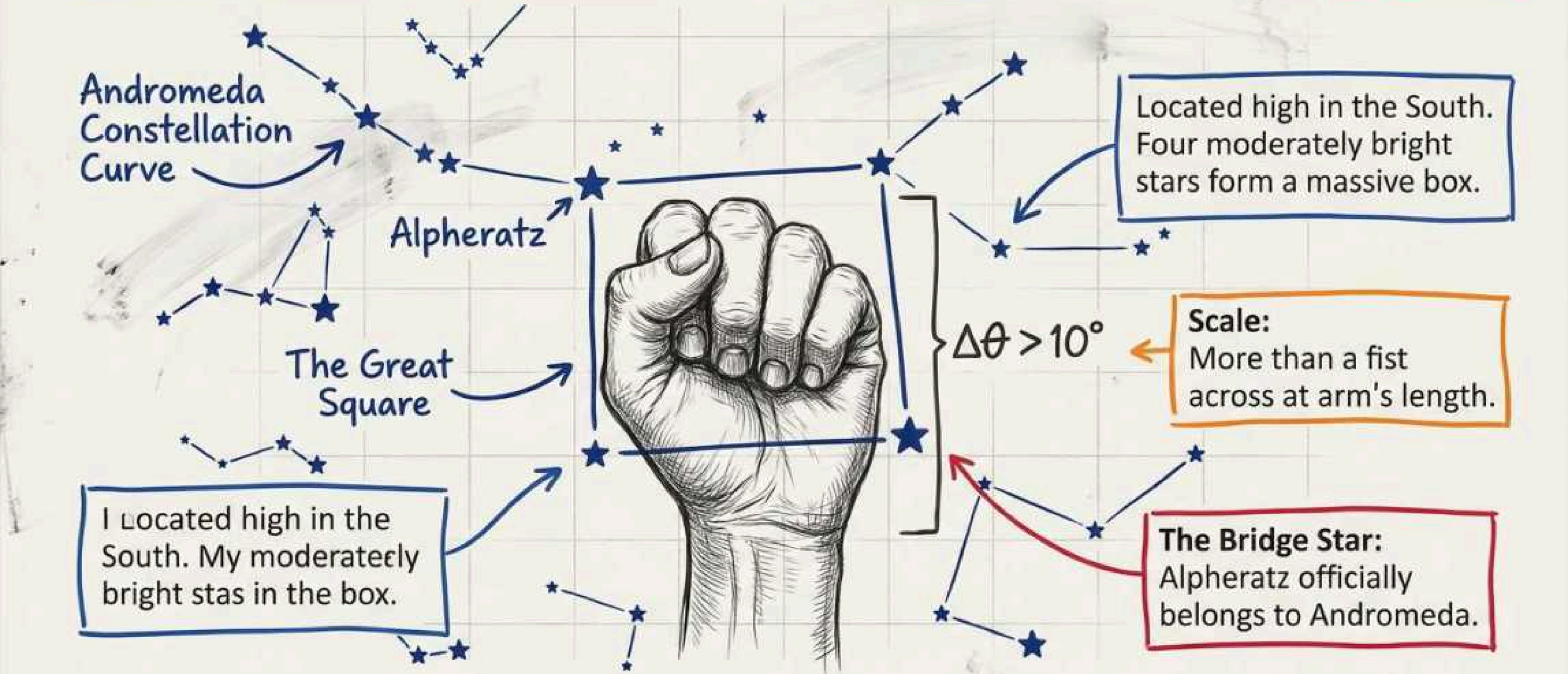
Positioning: Directly opposite the Big Dipper across Polaris.

Observation: Circumpolar from Seattle (never sets), riding high in the NE.



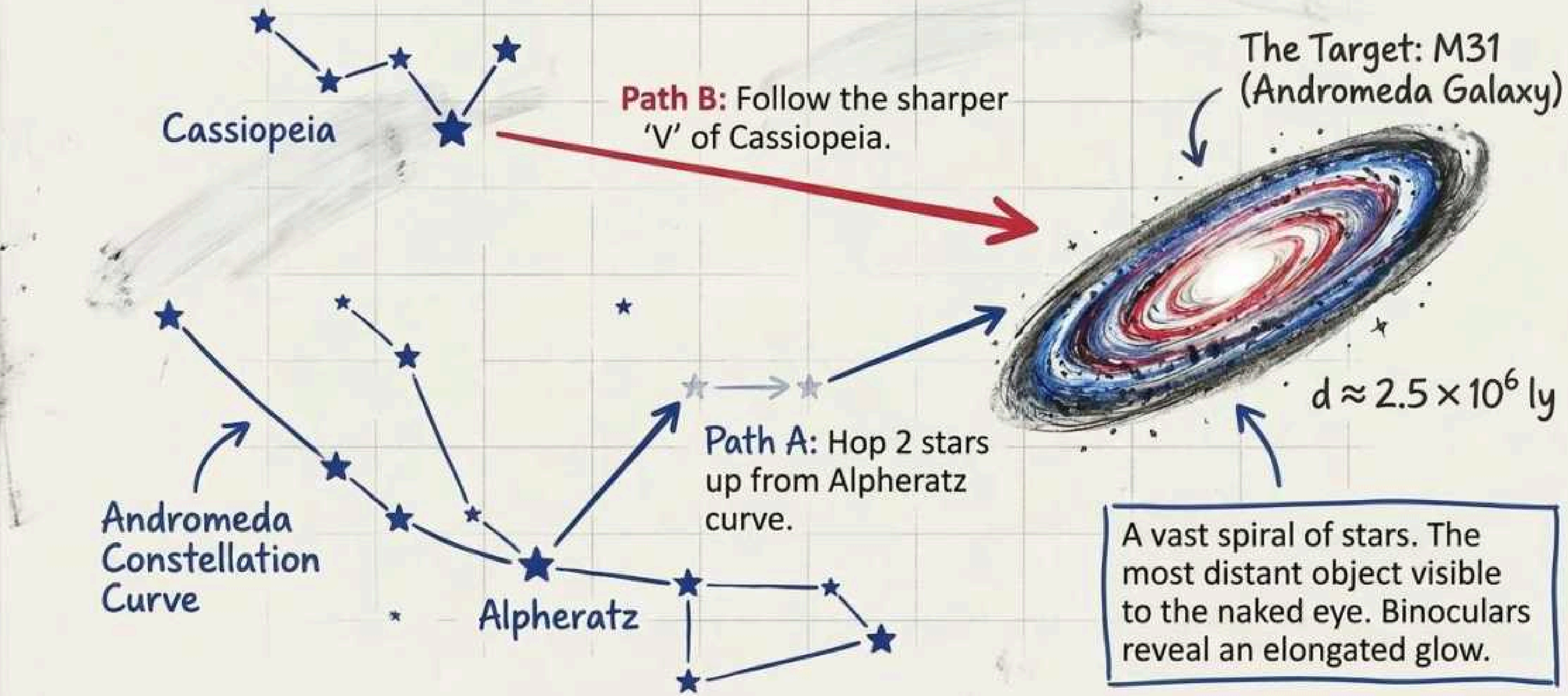
The Great Square of Pegasus

¶ 4.2



Locating the Andromeda Galaxy

¶ 4.3



Winter Dominance: Orion the Hunter

¶ 4.4

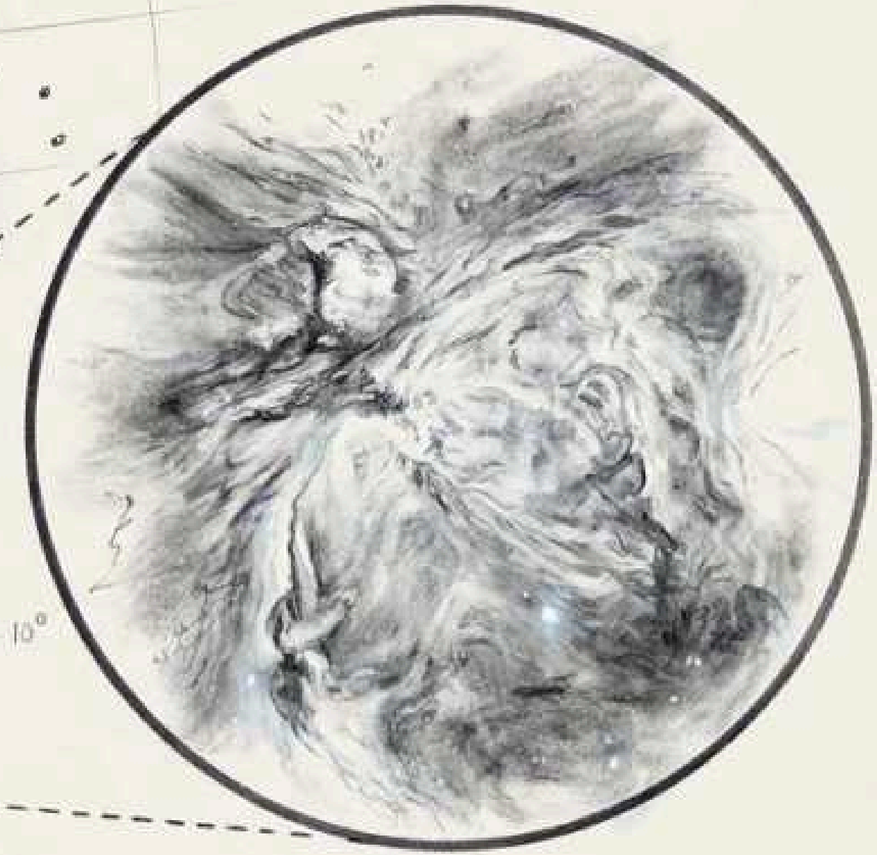
Betelgeuse
(Bright orange-red shoulder)

$T_{red} < T_{blue}$

The Belt
(Three stars in a short, straight line)

The Sword

Rigel
(Bright blue-white knee)



The Orion Nebula
A glowing cloud of star-forming gas visible as a misty patch in binoculars.

Orion's Belt as a Superb Pointer

¶ 4.5



The orange eye of Taurus the Bull, set within a V-shaped cluster.

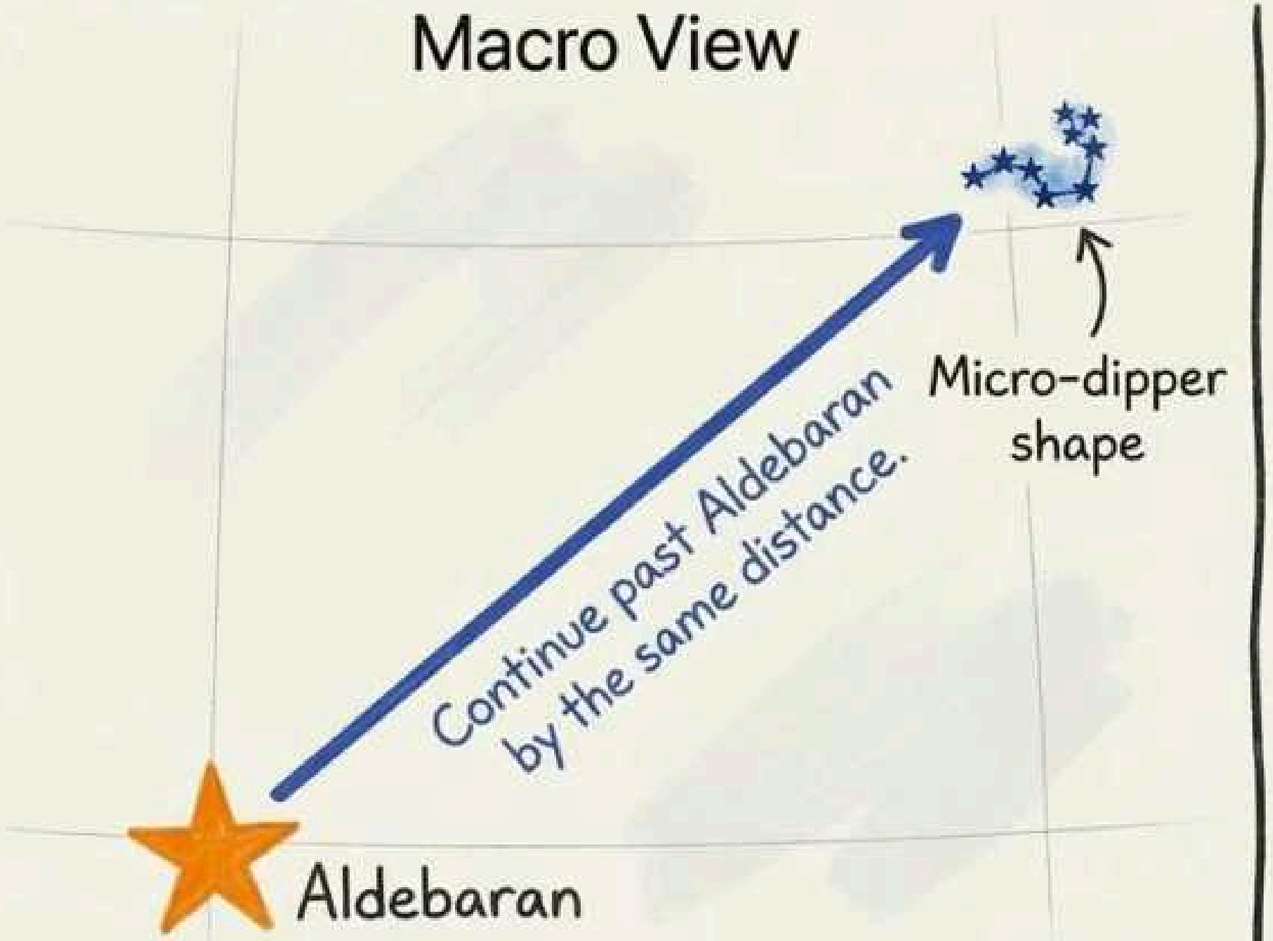
Sirius
(Canis Major)

The brightest star in the night sky. Twinkles in flashing colors near the horizon due to turbulent air.

The Pleiades (The Seven Sisters)

¶ 4.6

Macro View



Micro View



Among the loveliest sights in the sky, noted by cultures worldwide.
Most see 6-7 stars unaided; binoculars reveal dozens.

$n_{\text{naked_eye}} \approx 6 \text{ to } 7$

$n_{\text{binoculars}} \gg 20$

The Winter Hexagon

¶ 4.7



Gemini (The Twins):
Castor & Pollux.
Pollux is slightly brighter and more orange.

V_6: Pollux
(Gemini)

V_1: Capella
(Auriga)

V_5: Procyon
(Canis Minor)

V_2: Aldebaran

The Core:
Betelgeuse

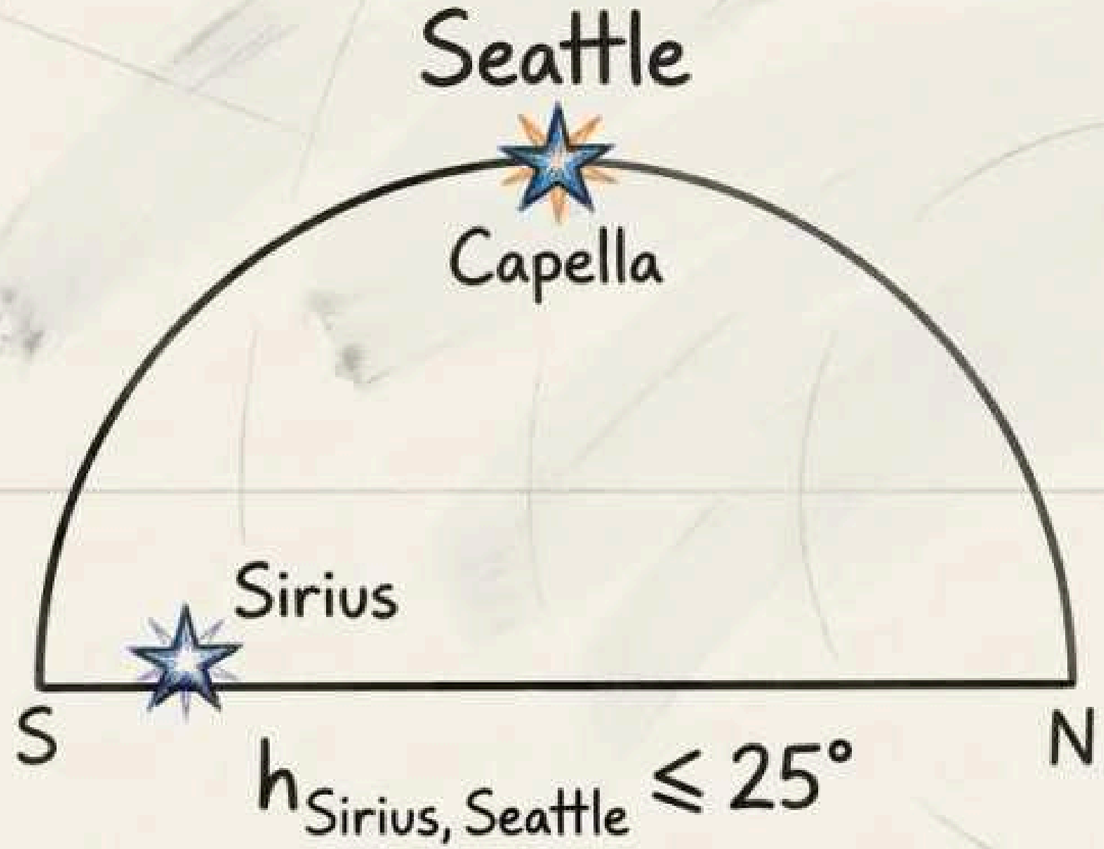
V_4: Sirius

V_3: Rigel

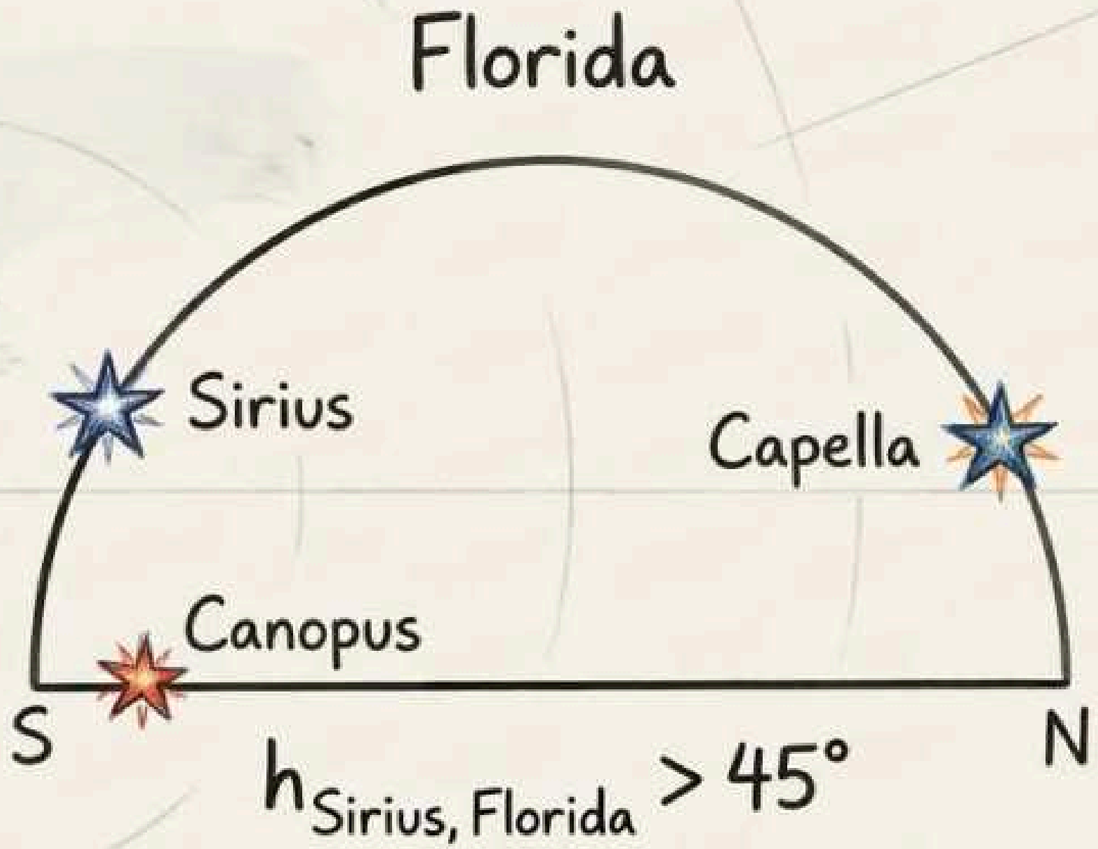
The Great Ring:
Learn these six outer stars, and you know the brightest stars of winter.

Observational Relativity: Seattle vs. Florida

¶ 4.8



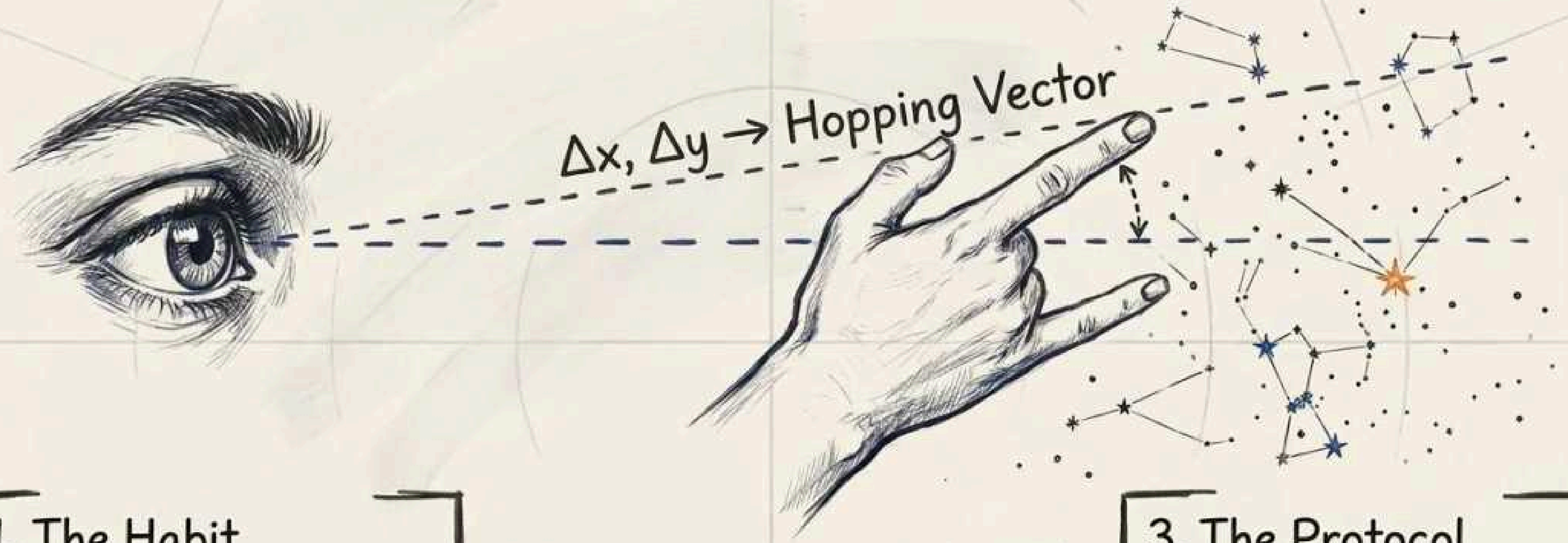
- Capella passes almost overhead (never sets). Sirius never climbs much above 25 degrees.



- Sirius climbs high. Deeper southern constellations become visible, including Canopus (which never rises in Seattle).

Methodology: The Art of Star-Hopping

¶ 4.9



1. The Habit

Move from a known pattern to the next by following lines and measuring with your hand.

2. Examples Practiced

The Pointers, the arc to Arcturus, and Orion's Belt.

3. The Protocol

Find the object *first* by hopping. Only then compare and verify with a chart or app.

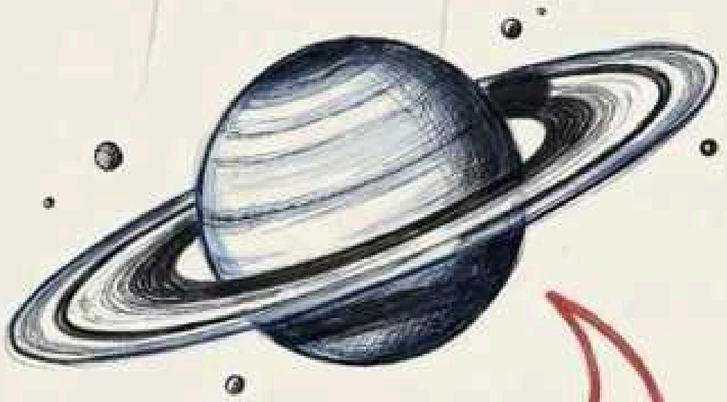
Summary & Next Steps: The Seasonal Sky

¶ 4.10

Autumn Foundation → Cassiopeia & Pegasus → Andromeda Galaxy

{Autumn Variables} + {Winter Variables} = The Seasonal Sky

Winter Foundation: Orion → Sirius, Aldebaran, Pleiades → Winter Hexagon



Up Next: We turn to the wanderers among the stars—the Planets.