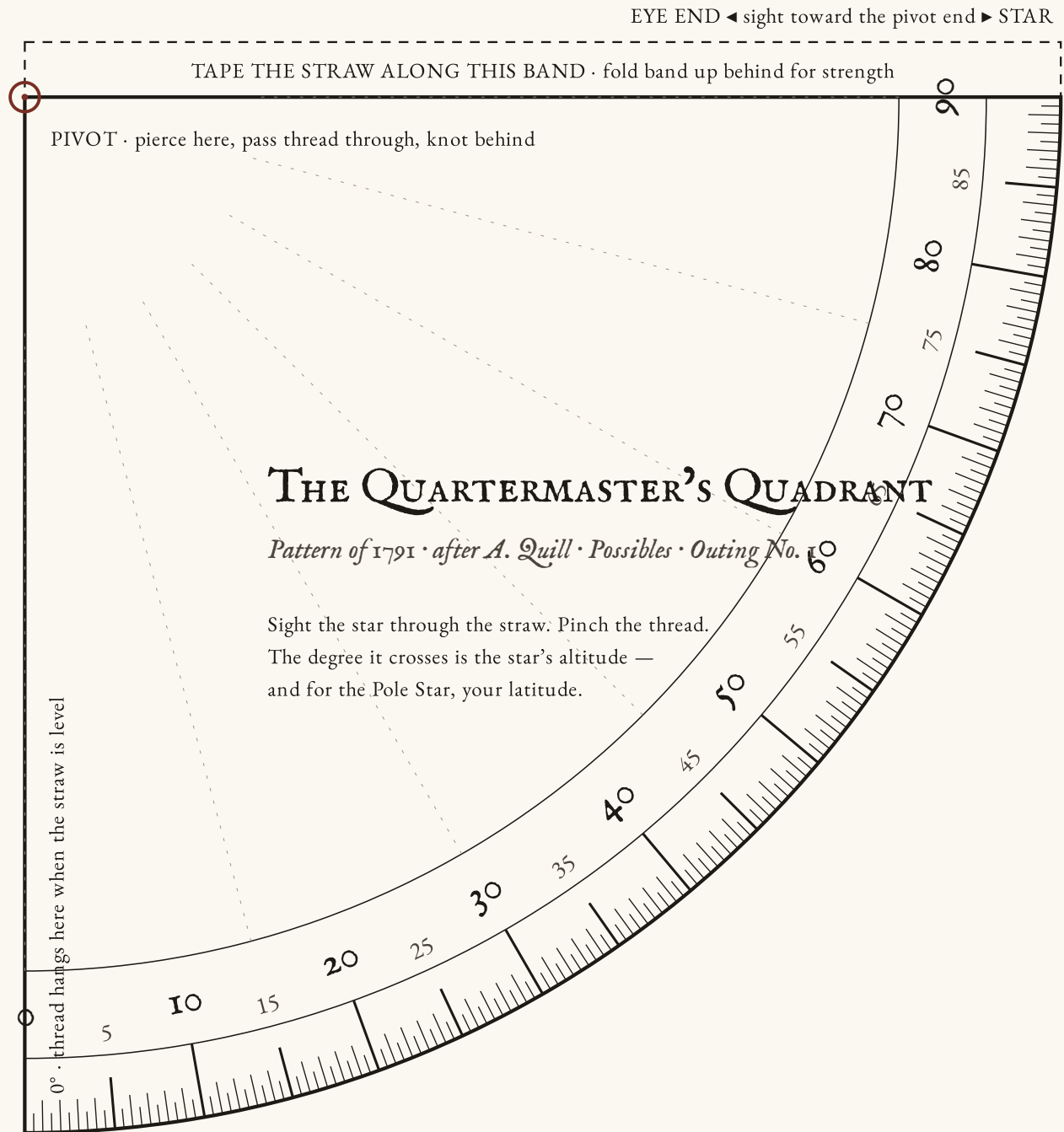
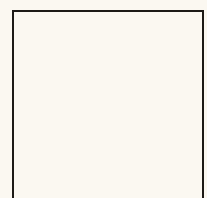




Any print scale works. Angles don't change when a page shrinks, so "Fit to page" is fine. For a sturdier instrument, glue this sheet to cereal-box card before cutting. Cut along the solid outline only.

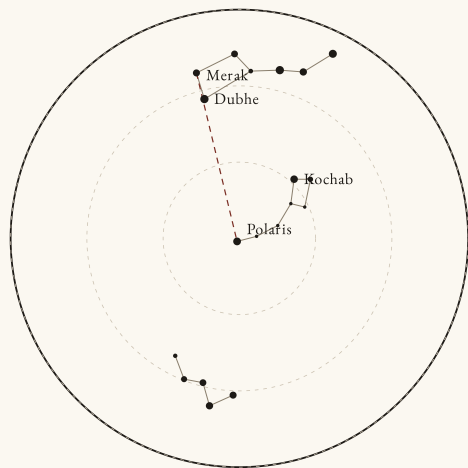


1 inch at 100%

ASSEMBLY · ABOUT 25 MINUTES

- 1. **Stiffen.** Glue Sheet I to thin card (a cereal box is ideal). Smooth it flat; let it set five minutes under a book.
- 2. **Cut.** Cut the quarter-circle and the dashed straw band as one piece. Score the dashed line lightly and fold the band back behind the quadrant — it makes a stiff spine.
- 3. **Mount the sight.** Tape a straight drinking straw along the top edge, flush with the corner. Look through it at a light: it must be clear and straight.
- 4. **Hang the plumb.** Pierce the red *pivot* mark with a pin. Pass 10–12 in of thread through, knot it behind, and tie a washer, nut, or three paperclips to the free end.
- 5. **Check it.** Hold the straw level against a tabletop edge. The thread should fall on 0°. If it doesn't, re-pierce the pivot exactly on the mark.
- 6. **Sign it.** Write your initials and today's date on the back. Instrument-makers always did.

POLE-STAR FINDER



Turn the card until the Dipper matches the sky

From **Merak** through **Dubhe** — the two stars at the lip of the Dipper's bowl — go about five times their gap. The modest star waiting there, alone, is **Polaris**.

YOUR HAND IS A RULER

At full arm's length, for most adults:

Fist
≈ 10°

Three fingers
≈ 5°

Little finger
≈ 1°

Count fists up from the horizon to check your quadrant. It works for the rest of your life — on any hill, deck, or porch.

FIELD LOG · NIGHT OF THE OUTING

Reading	Time	Degrees
First		
Second		
Third		
Mean		

Place: _____ Sky: _____

Keep this card. It goes in your Ledger behind Plate I.