

Exercises and Questions Answers

Sextant Handling

1. How can you be sure your sextant is well calibrated?
2. Look up the correction for a Height of the Eye of 2m.
3. In what situation/setting may we combine the correction for the DIP and the Index Error in one correction for both.
4. The Sextant Reading is $32^{\circ}15'.6$. What is the SA adjusted for a IE of $6'$ off the arc?
5. The HoE is 5m. What is the Apparent Altitude?
6. The sextant reading was on the lower limb, so a correction for the semi-diameter is needed. The semi-diameter is found on the Daily pages, underneath the GHA and Dec-columns. What is the semi-diameter on January 5?
7. Look up the applicable Altitude Correction.
8. Explain why this number is different from the semi-diameter.
9. What is the Observed Altitude?

With the micro-meter set to the Index Error, you should see no distortion of the image through the telescope.

$$\text{DIP} = -2.5'$$

Doing several consecutive readings from the same position.

$$\text{Ha}' = 32^{\circ}15'.6 + 6' = 32^{\circ}21'.6$$

$$\text{Ha} = 32^{\circ}21'.6 - 3.9' = 32^{\circ}17'.5$$

$$\text{SD} = 16.3'$$

$$\text{Alt. Corr.} = +14.7'$$

This correction is also adjusted for parallax and refraction.

$$\text{Ho} = 32^{\circ}17'.5 + 14.7' = 32^{\circ}32'.2$$