

Astronomy
Paper 1: Naked-eye Astronomy

Wednesday 3 June 2020 – Afternoon

Diagram Booklet

In the boxes below, write your name, centre number and candidate number.

Surname					
Other names					
Centre Number					
Candidate Number					

INSTRUCTIONS

There may be spare copies of some diagrams in case you need them.

**THIS DIAGRAM BOOKLET *MUST* BE RETURNED WITH THE
QUESTION PAPER AT THE END OF THE EXAMINATION.**

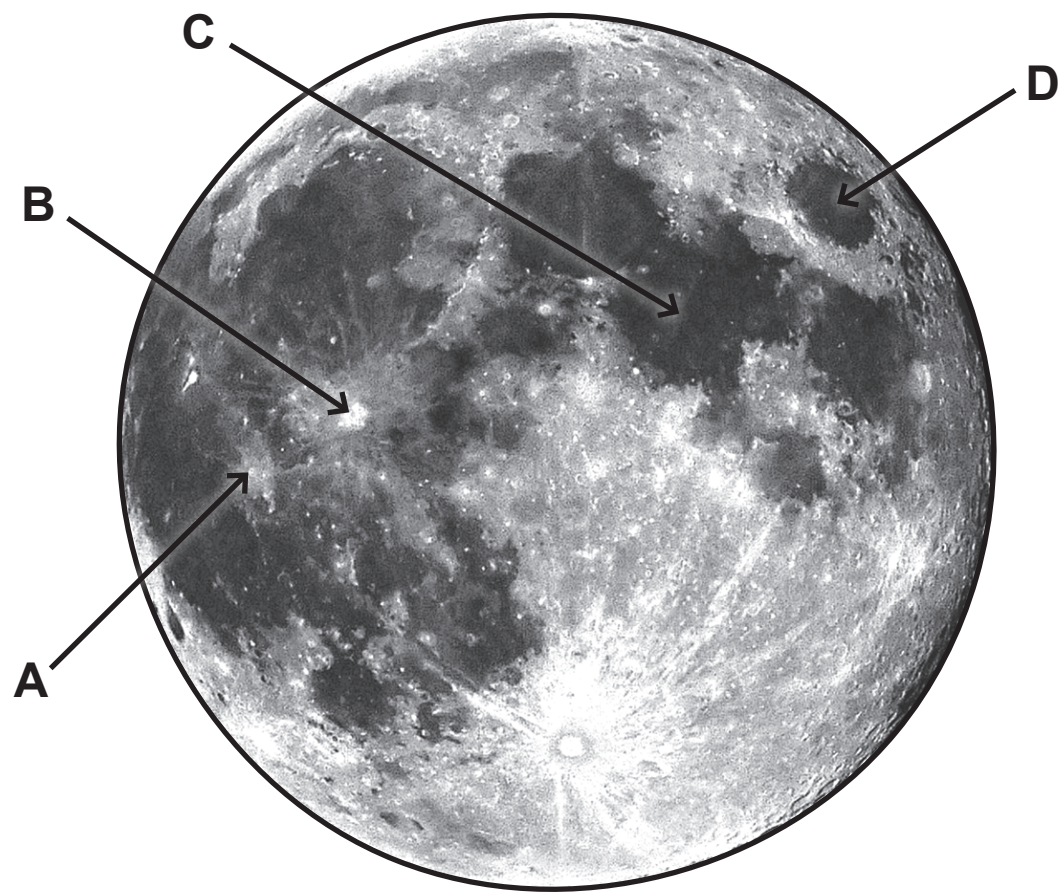
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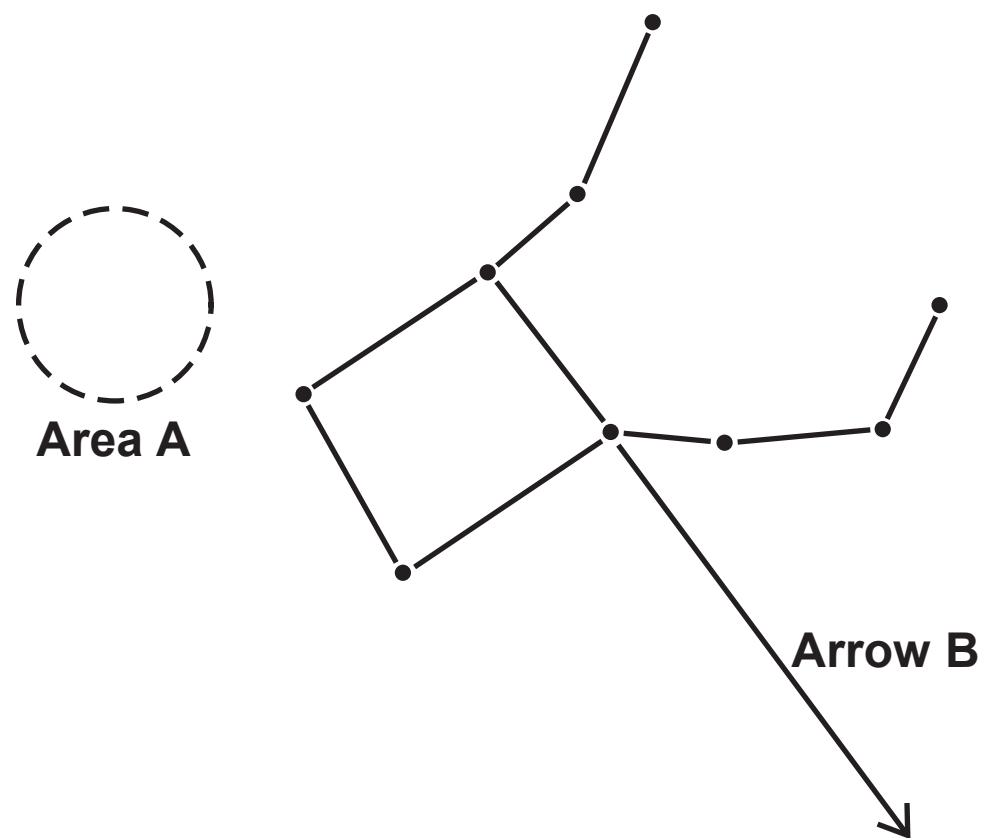
Question 1(a)

Figure 1



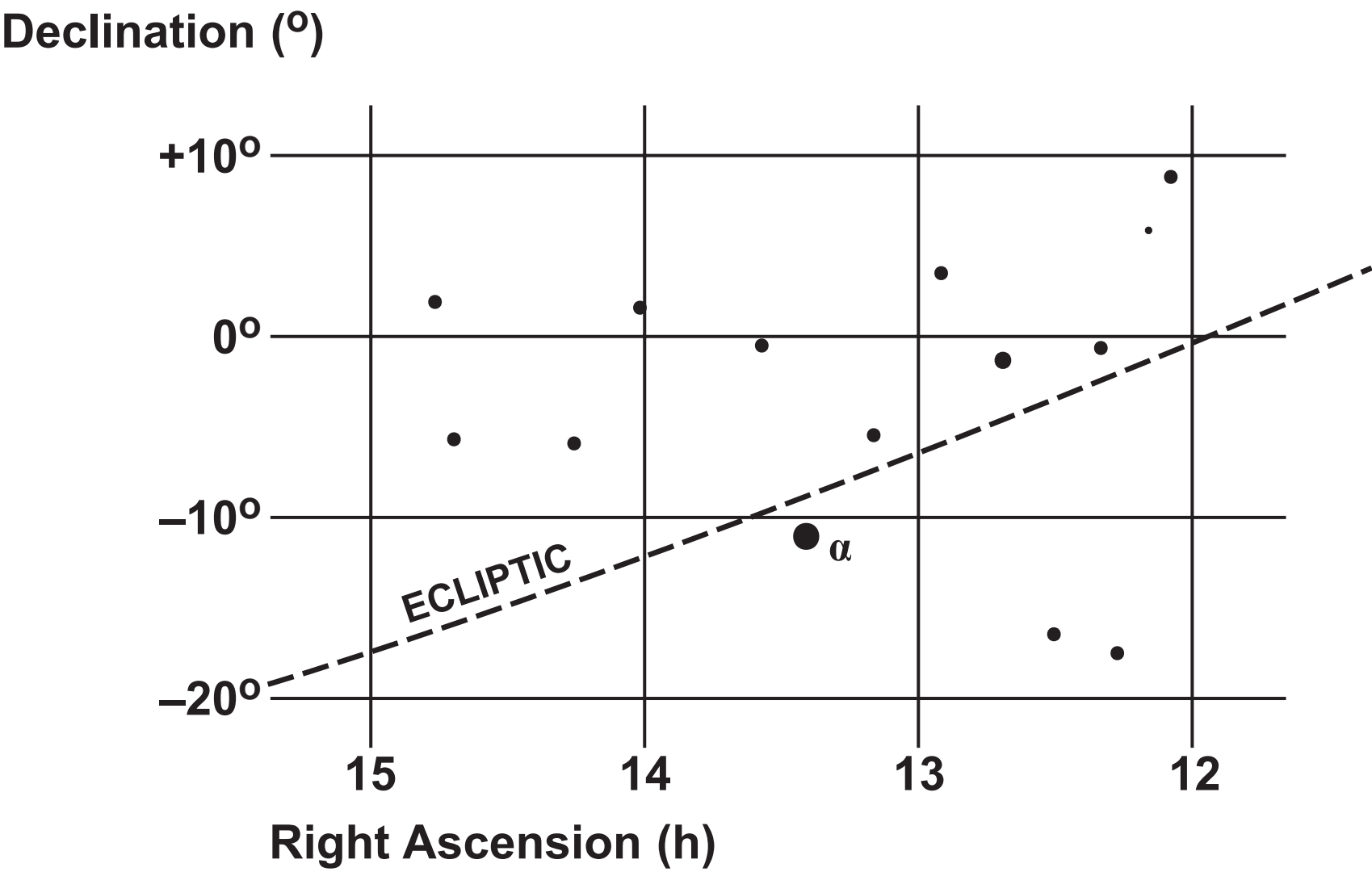
Question 1(b)

Figure 2



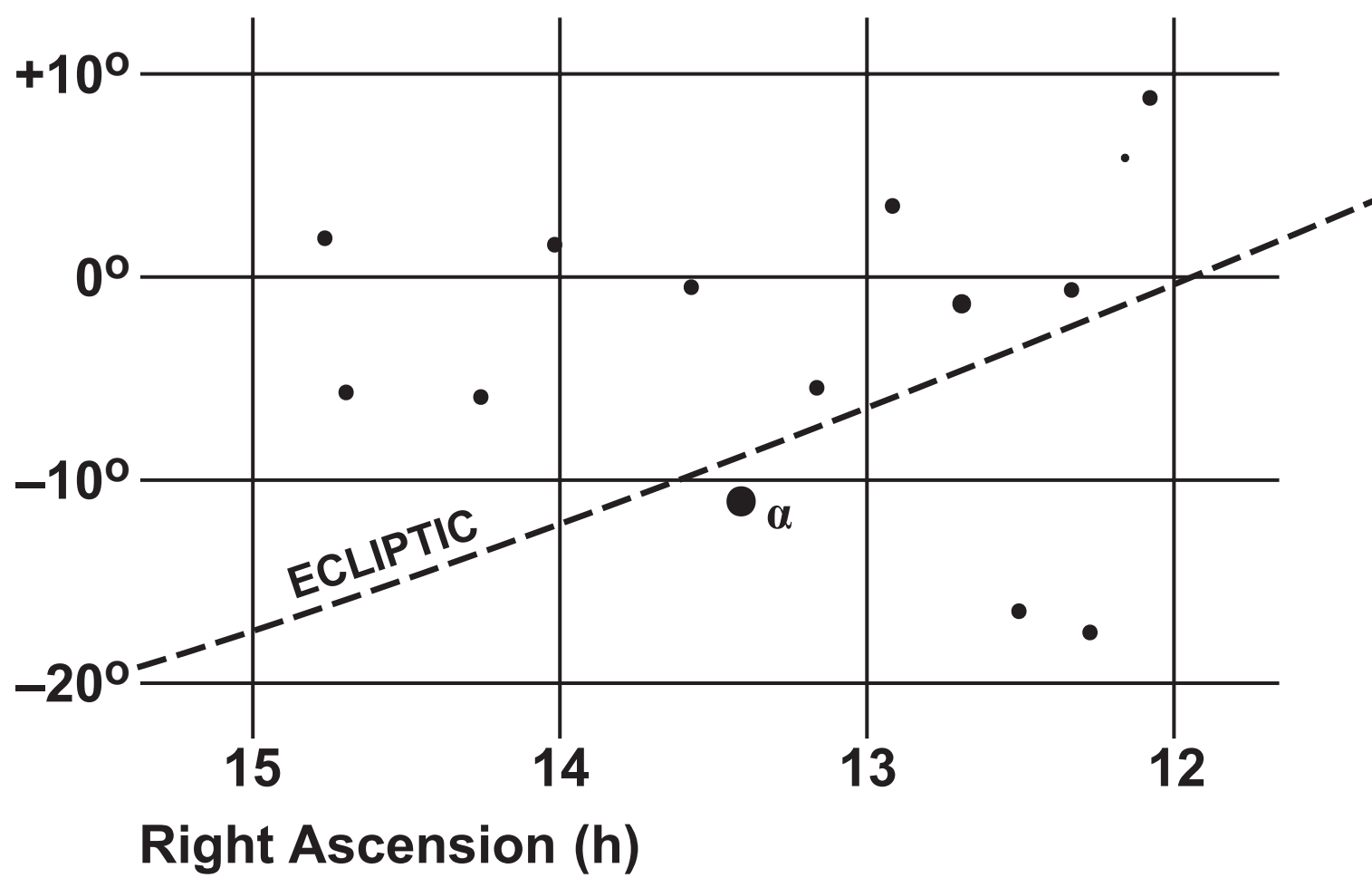
Question 2

Figure 3



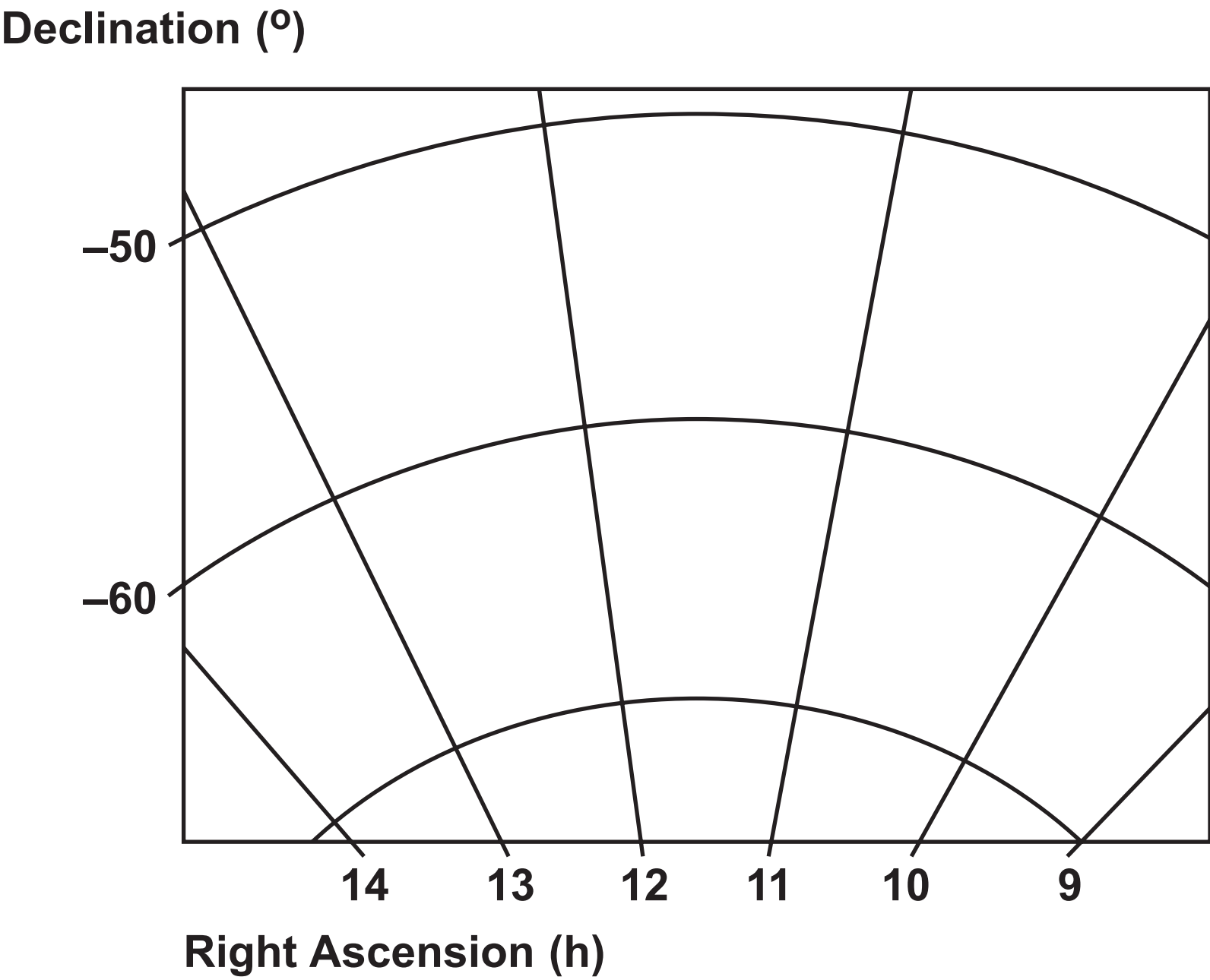
Question 2 (Spare copy)

Figure 3

Declination ($^{\circ}$)

Question 2(e)

Figure 4



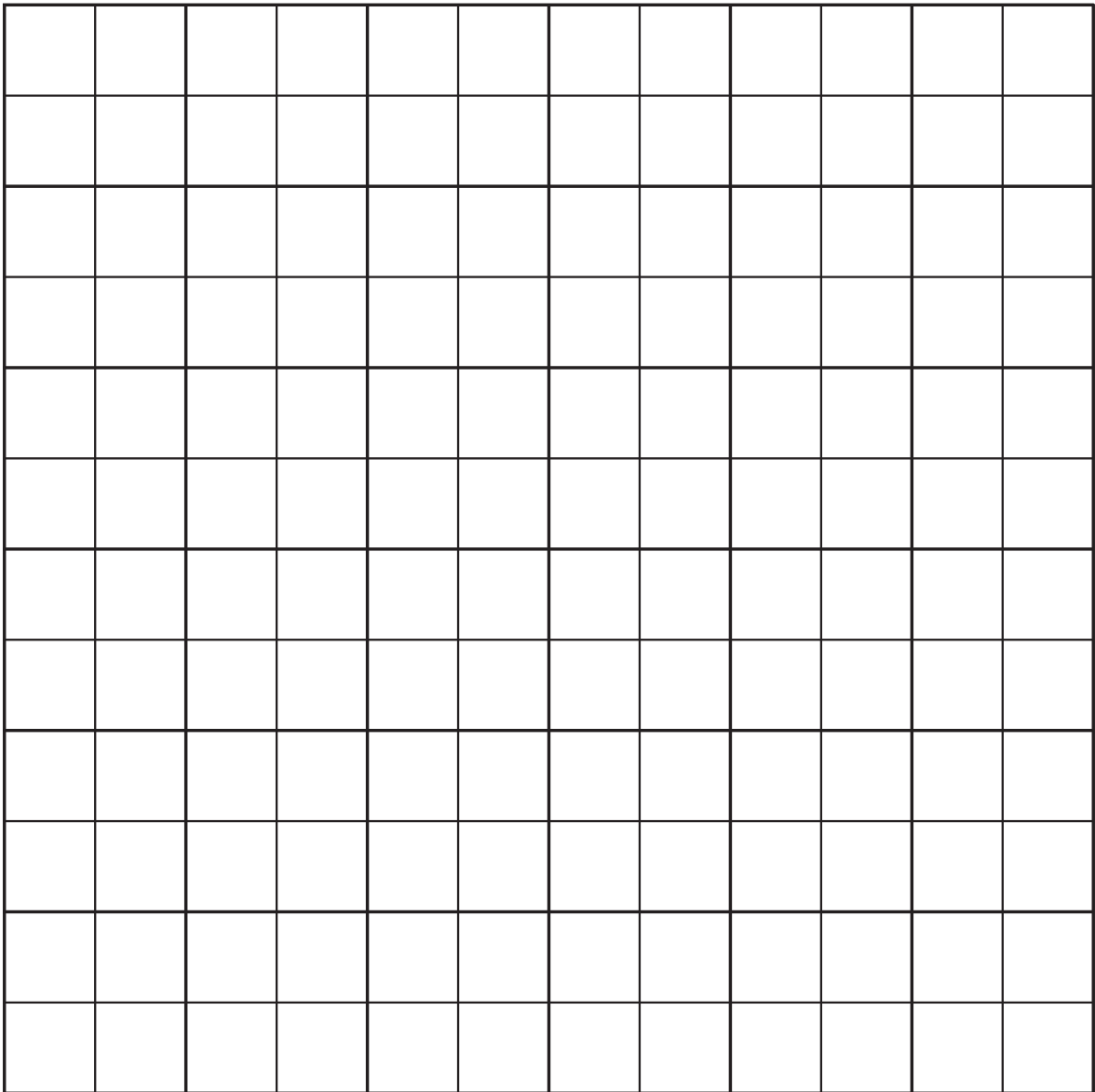
Question 3(b)

Figure 5

Star	Declination (°)	Hour angle (h : min)
α	−3	+4:30
β	+5	+3:00
γ	+55	−0:30
δ	+78	0:00

Question 4(a)(i)

Length of
shadow (cm)

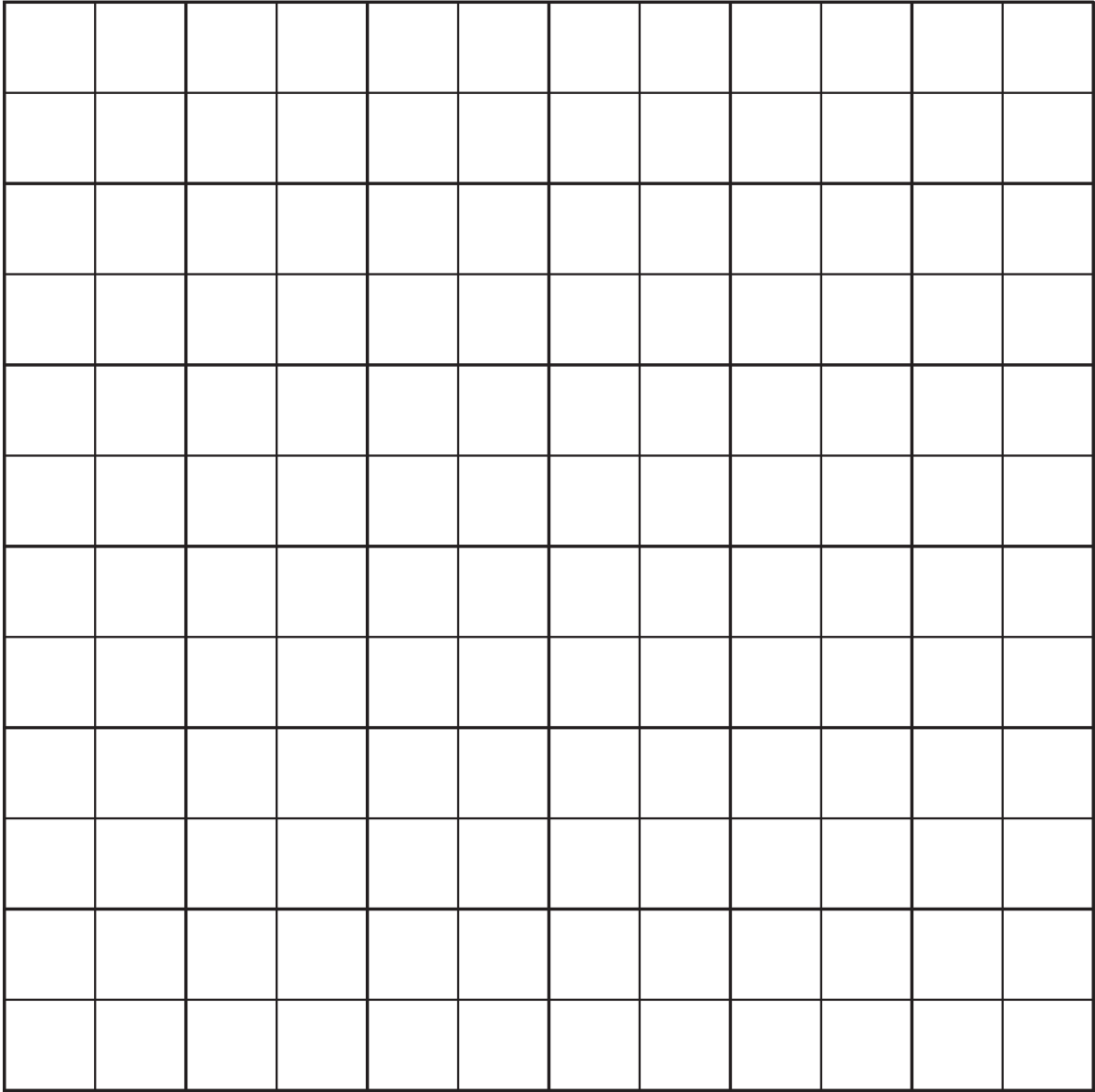


11:45 11:50 11:55 12:00 12:05 12:10 12:15

Time GMT (h : min)

Question 4(a)(i) (Spare copy)

Length of
shadow (cm)

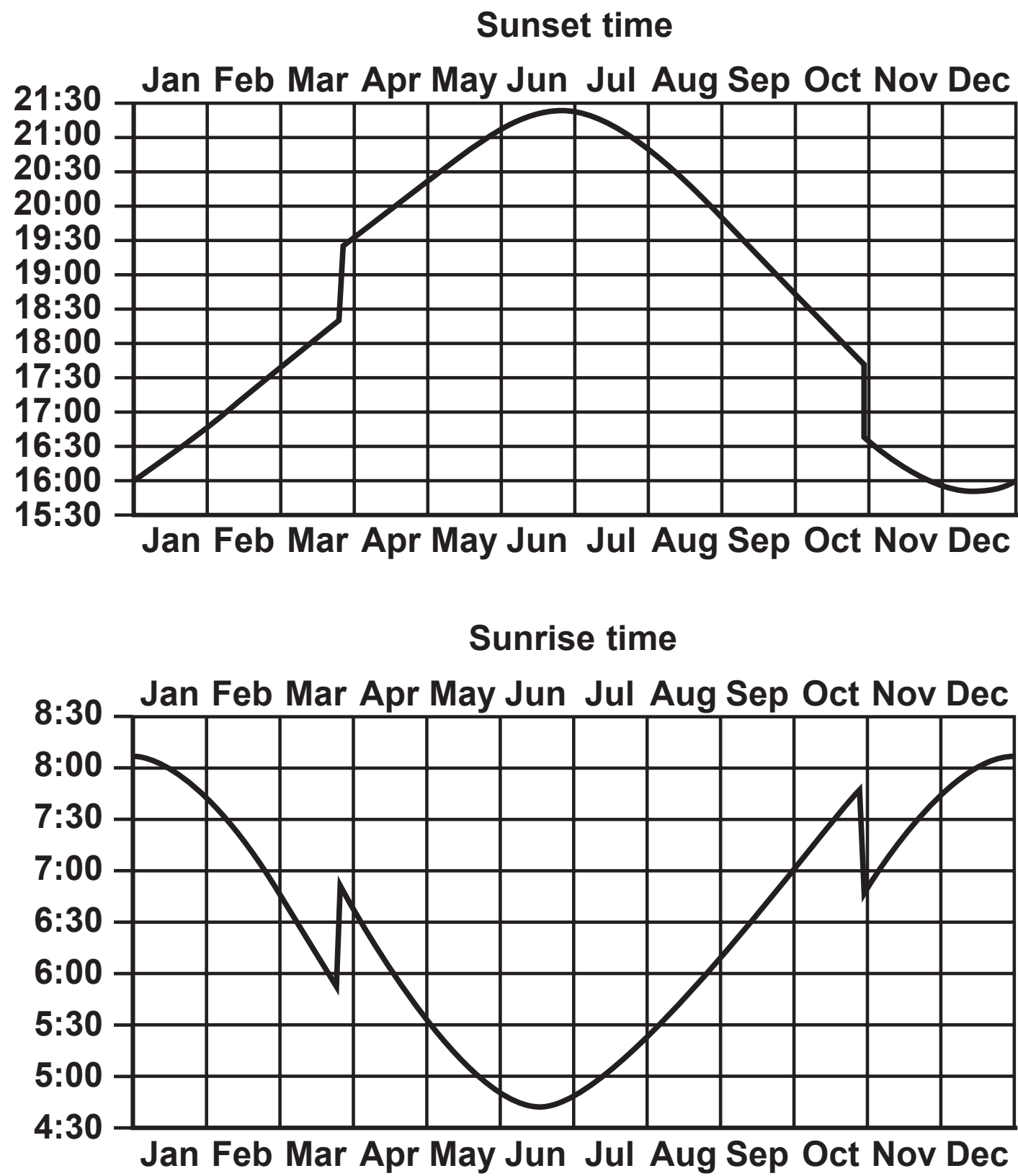


11:45 11:50 11:55 12:00 12:05 12:10 12:15

Time GMT (h : min)

Question 6(a)

Figure 7



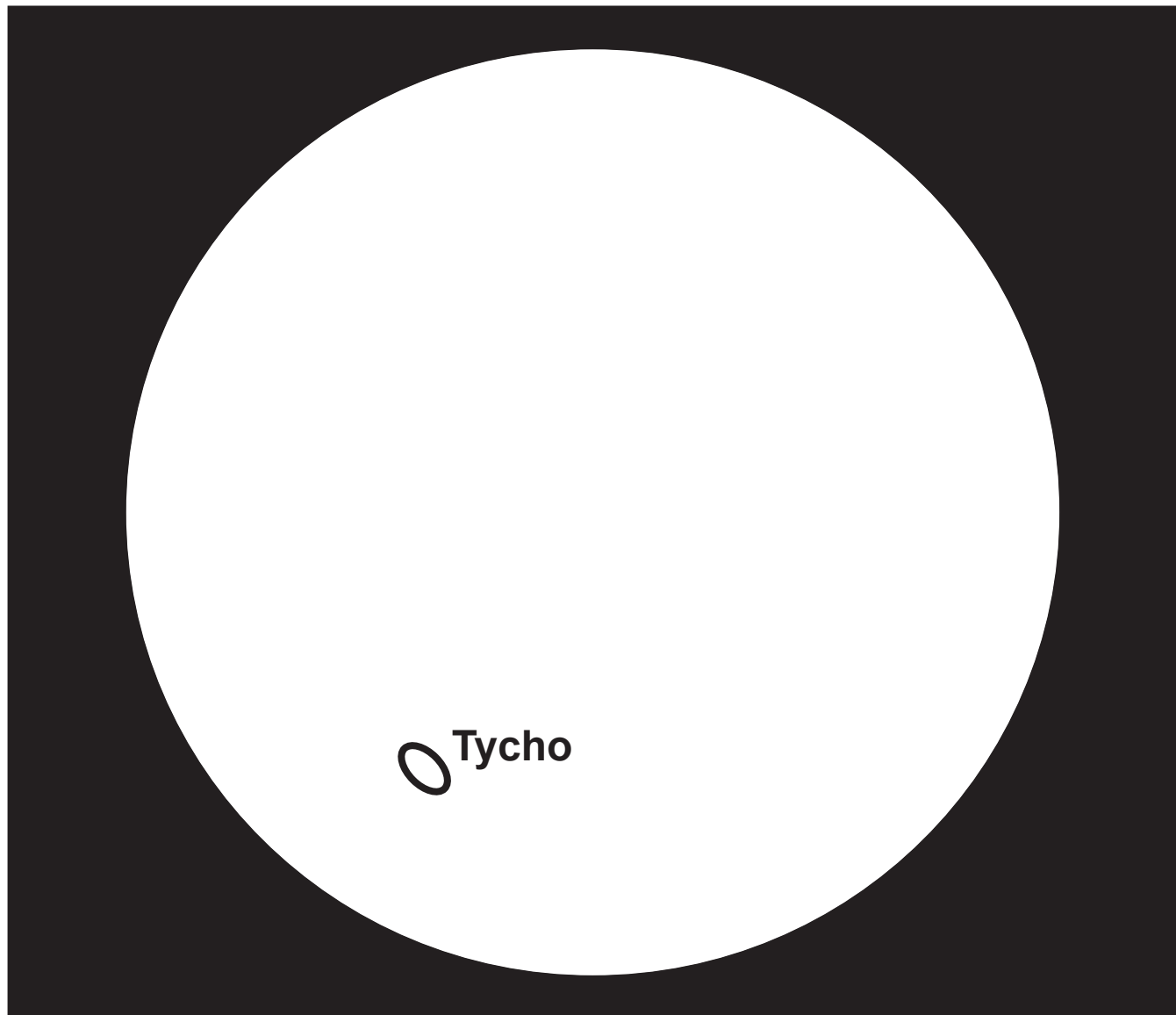
Question 6(b)

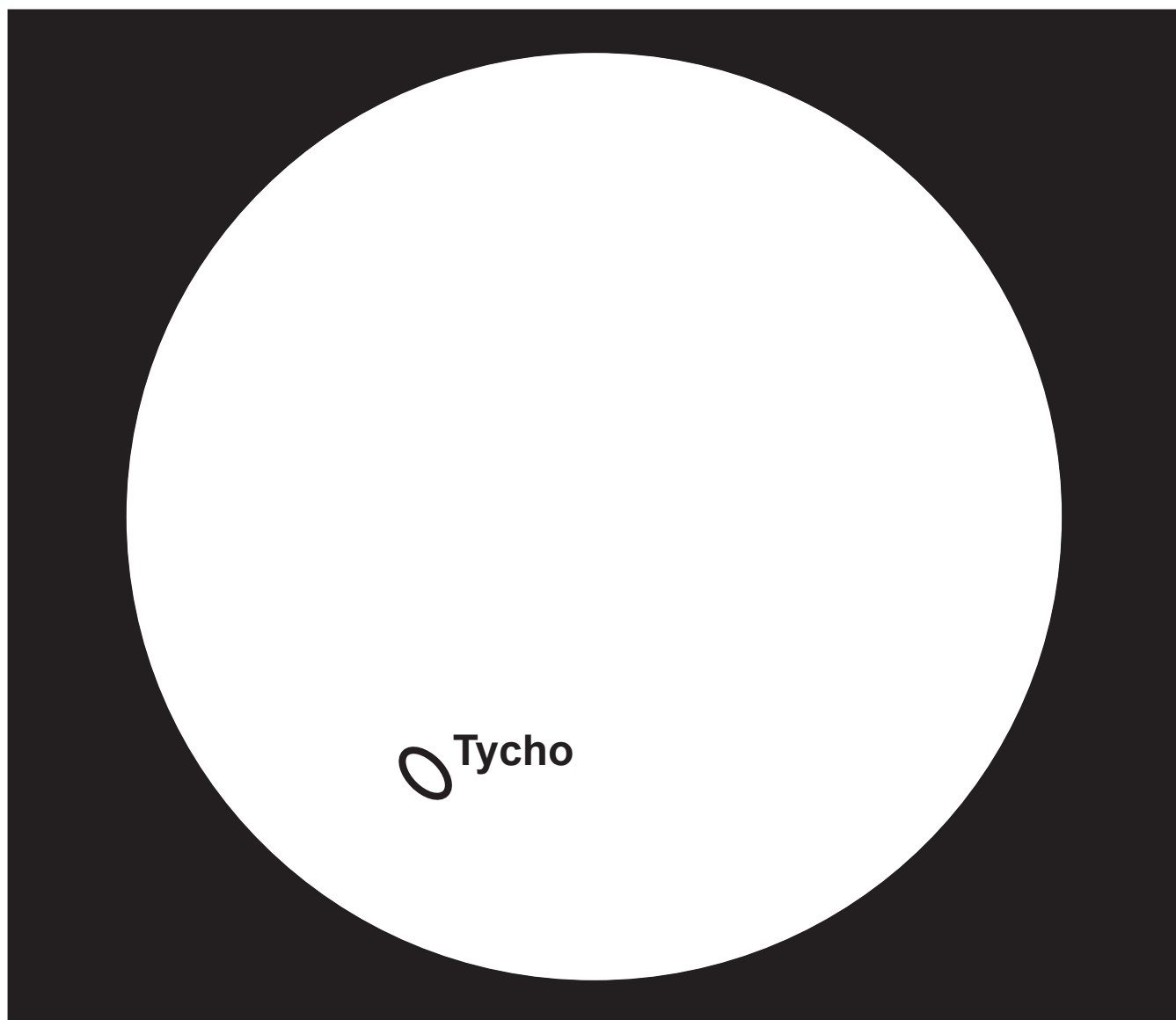
Figure 8

Date	Equation of Time (minutes)
7 September	+1
9 September	+2
11 September	+3

Question 8(c)

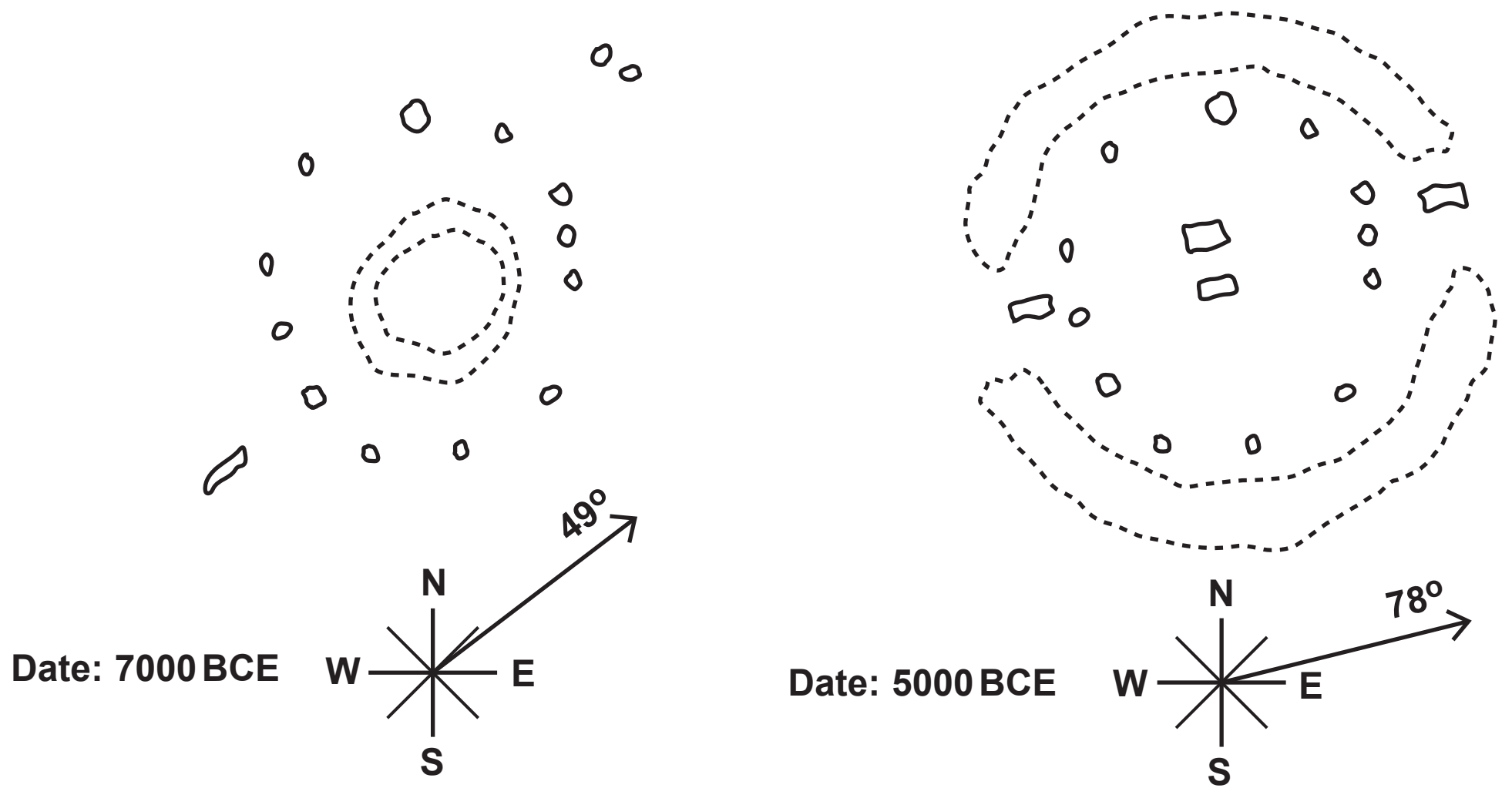
Figure 9



Question 8(c) (Spare copy)**Figure 9**

Question 9(a)

Figure 10



Question 9(c)

Figure 11

● Polaris



Question 9(c) (Spare copy)**Figure 11**

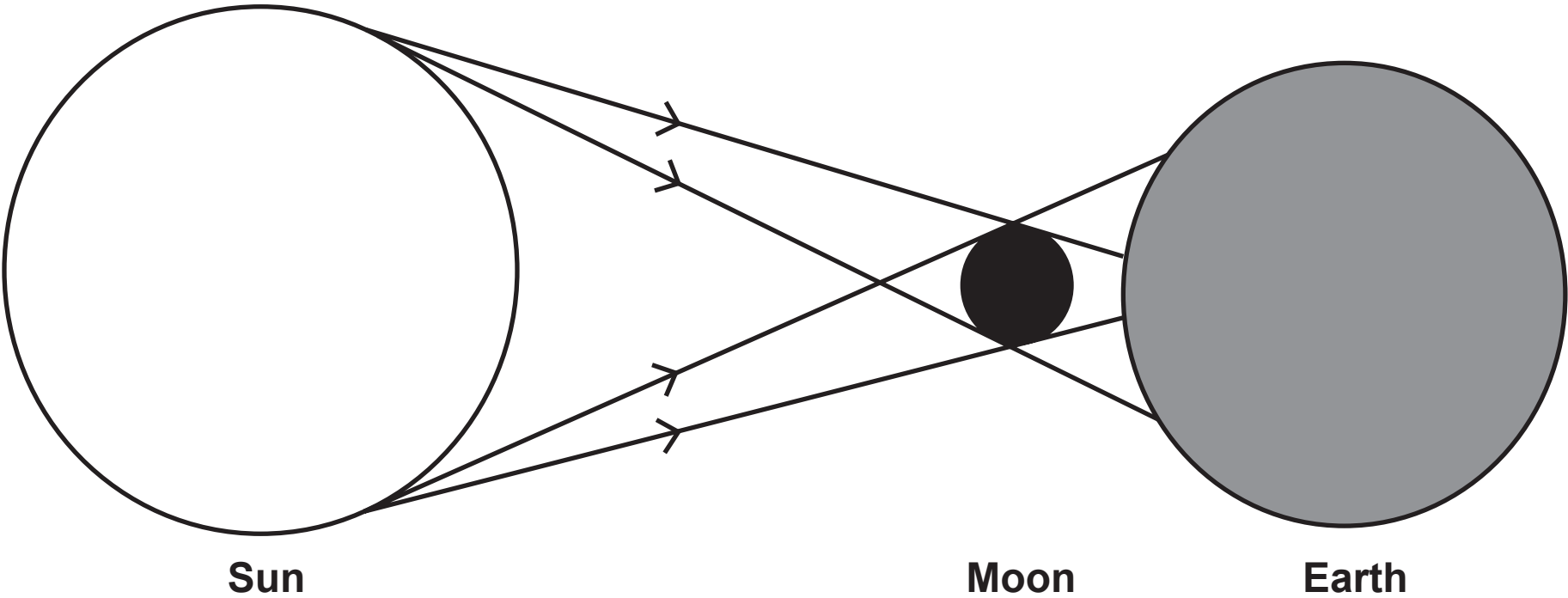
● Polaris



Question 10(a)

Figure 12

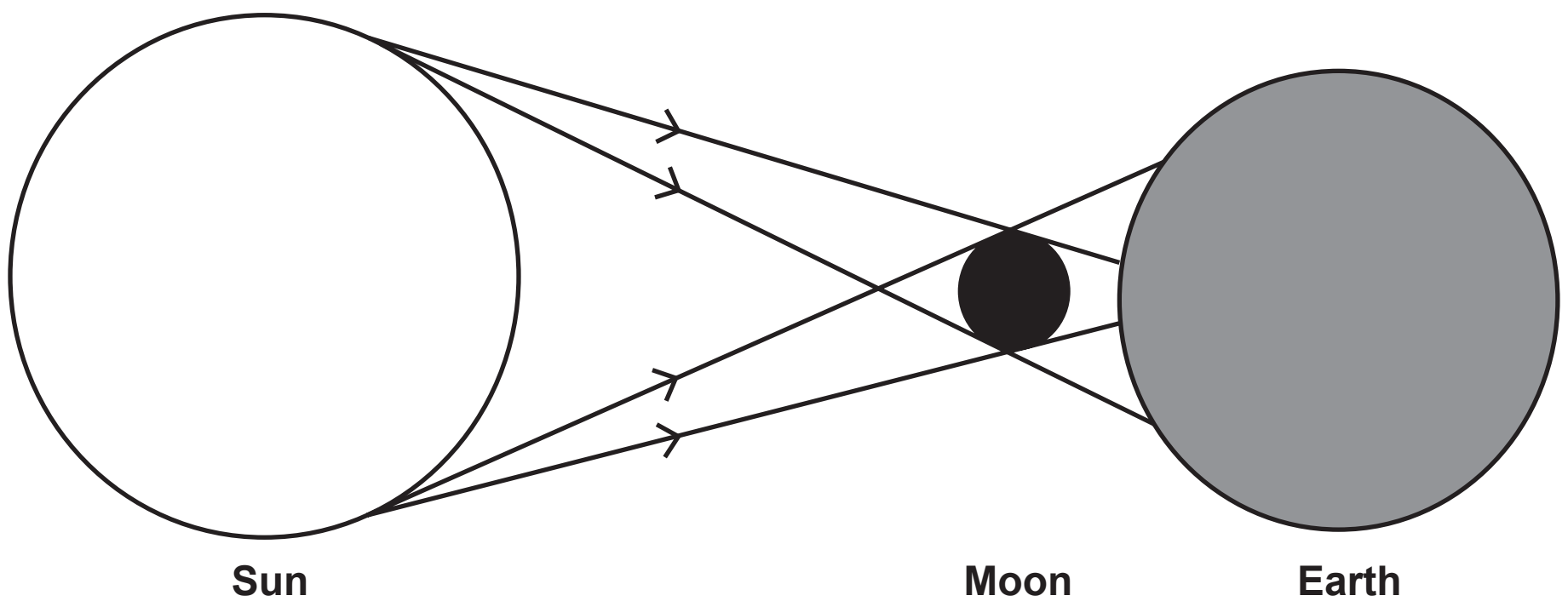
Not to scale



Question 10(a) (Spare copy)

Figure 12

Not to scale



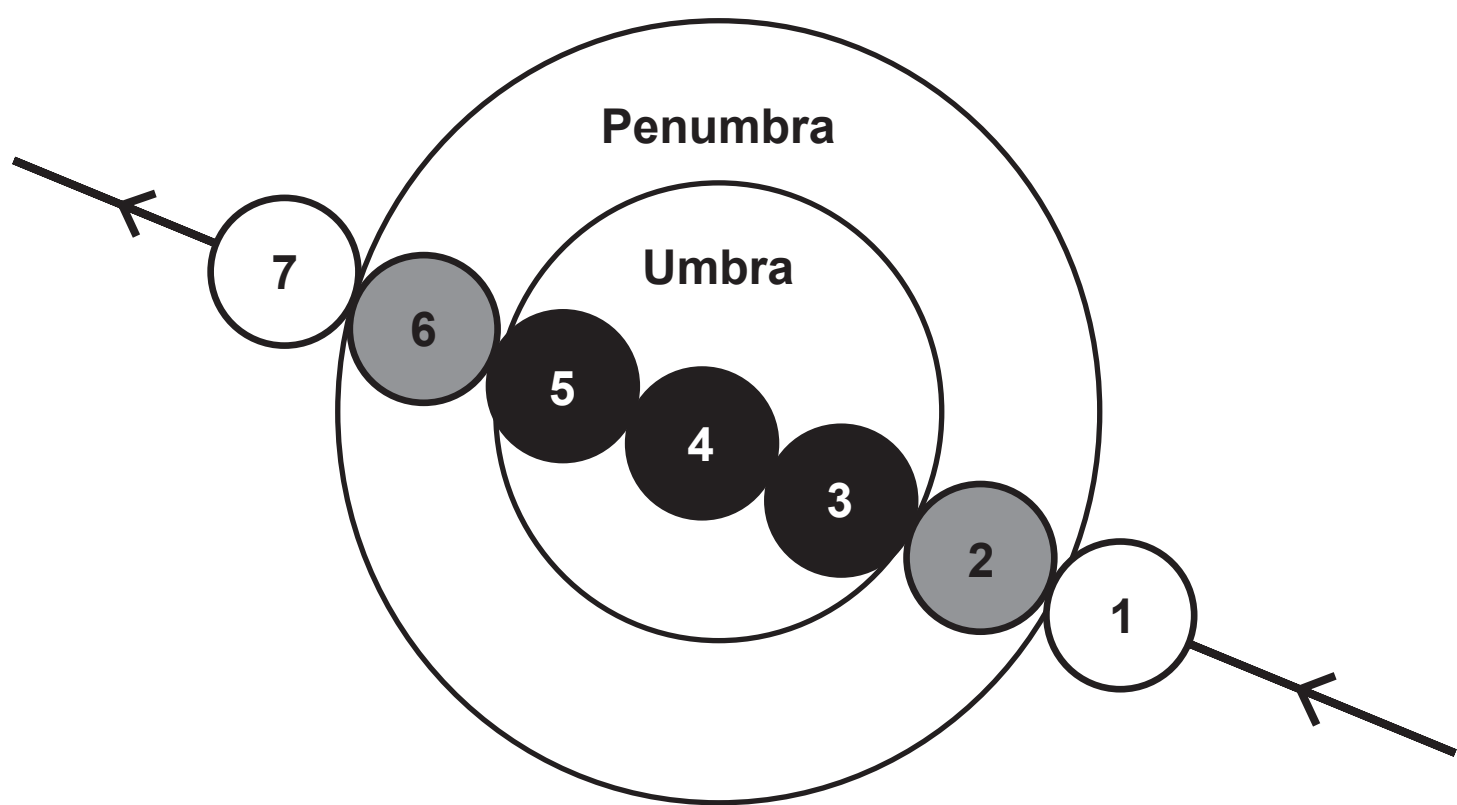
Question 10(d)

Figure 13

Mean Earth to Moon distance	384 000 km
Mean diameter of the Moon	3 470 km
Mean diameter of the Sun	1.39×10^6 km

Question 10(e)

Figure 14



Question 6(a)

(Source: <http://www.solipsys.co.uk/cgi-bin/sews.py?ModellingSunriseAndSunsetTimes>)