

Paper Reference(s) 1AS0/02
Pearson Edexcel Level 1/Level 2 GCSE
(9–1)

Astronomy
Paper 2
Telescopic Astronomy
Tuesday 18 June 2024 – Afternoon

Time: 1 hour 45 minutes

Diagram Booklet

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

**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.

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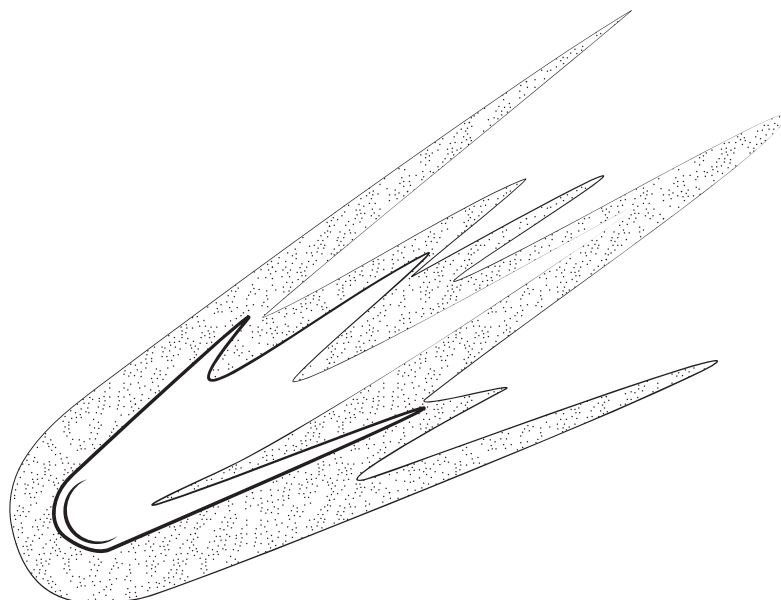
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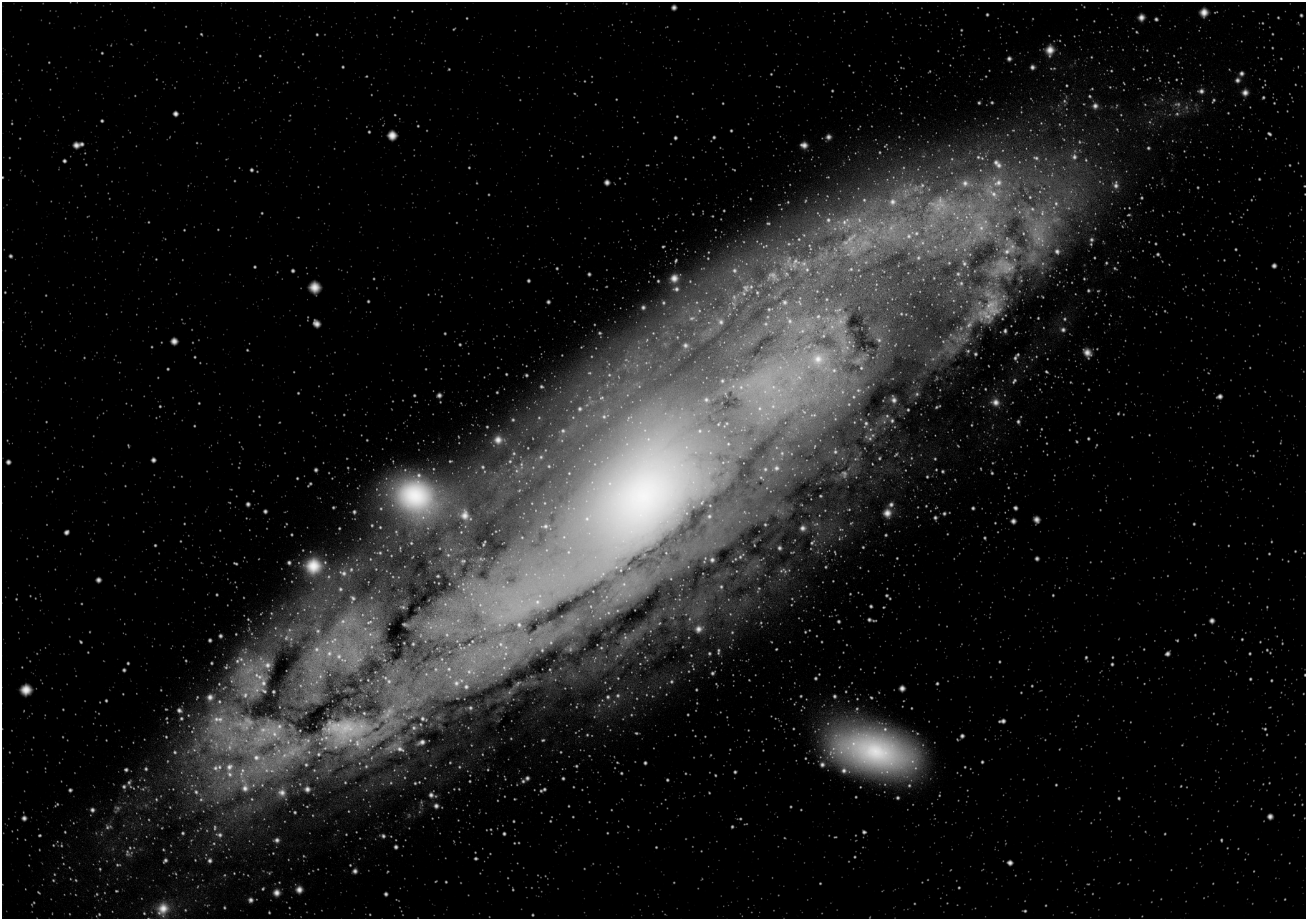
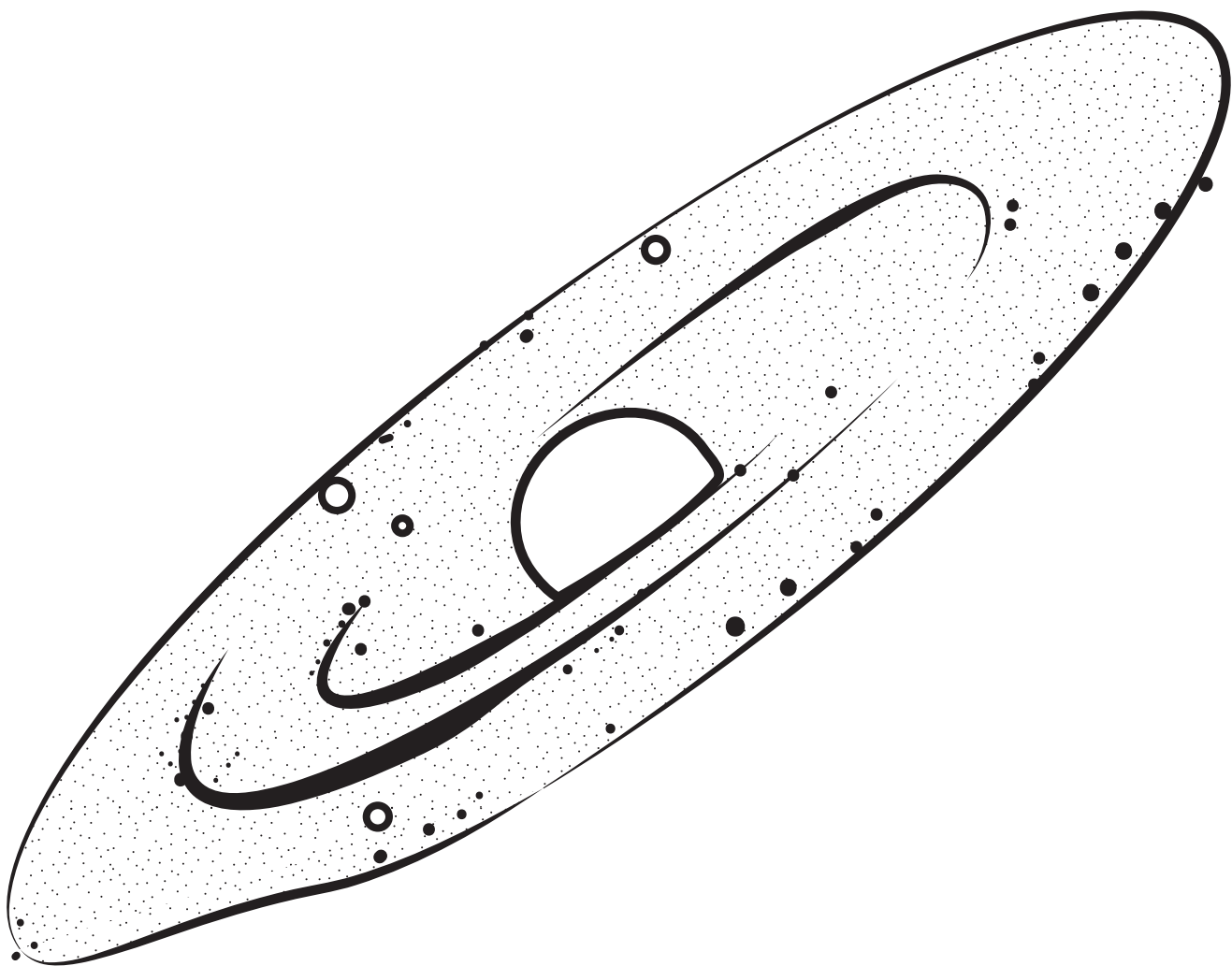
Question 1(a)(i)

FIGURE 1



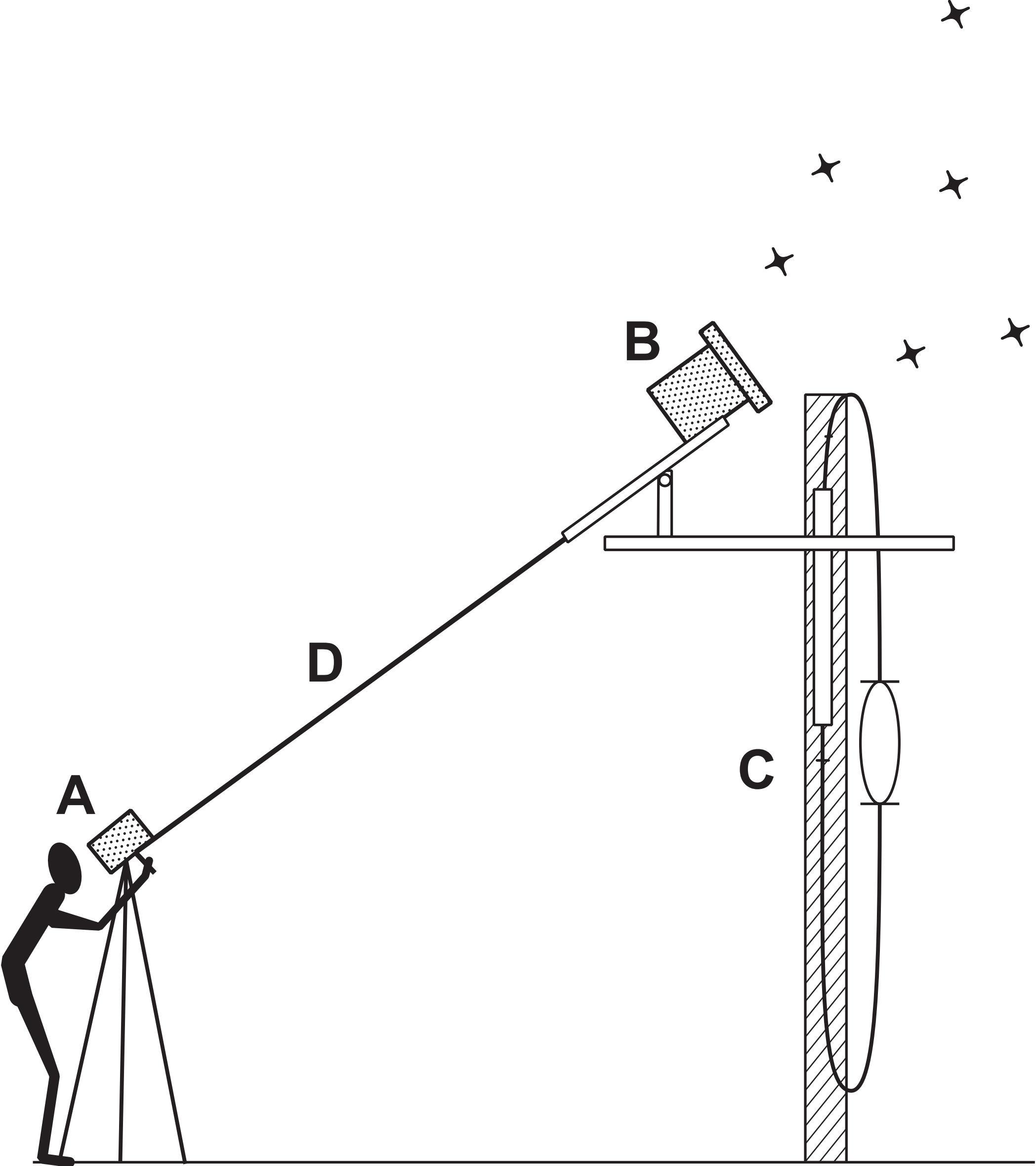
FIGURE 1 (outline)



Question 1(a)(ii)**FIGURE 2****FIGURE 2 (outline)**

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FIGURE 3

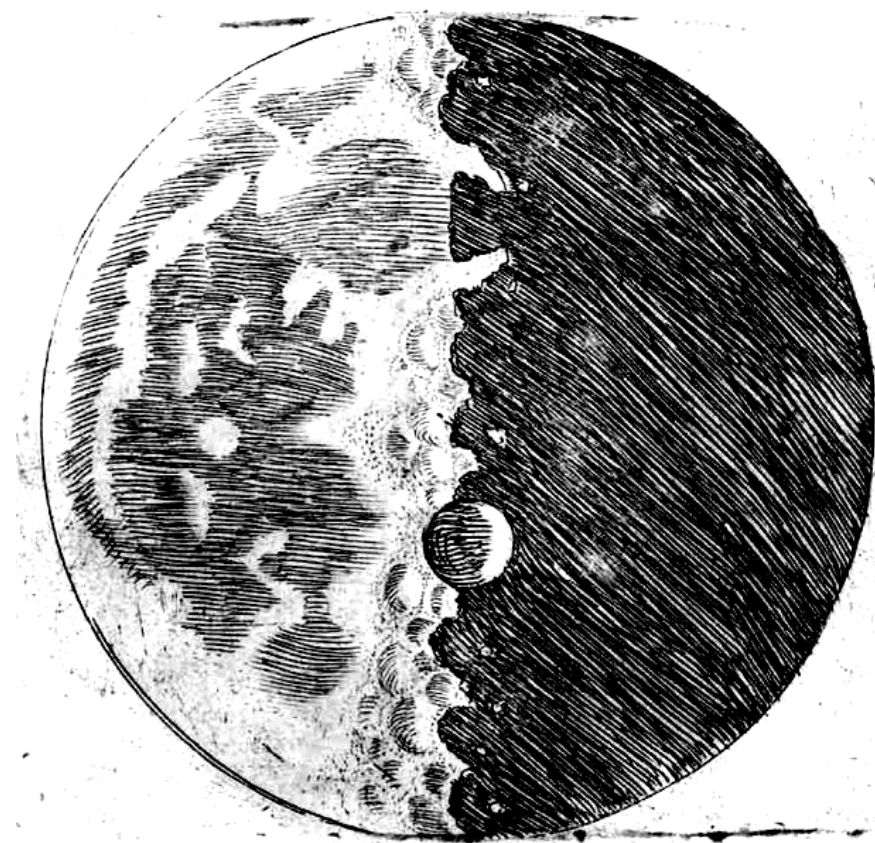
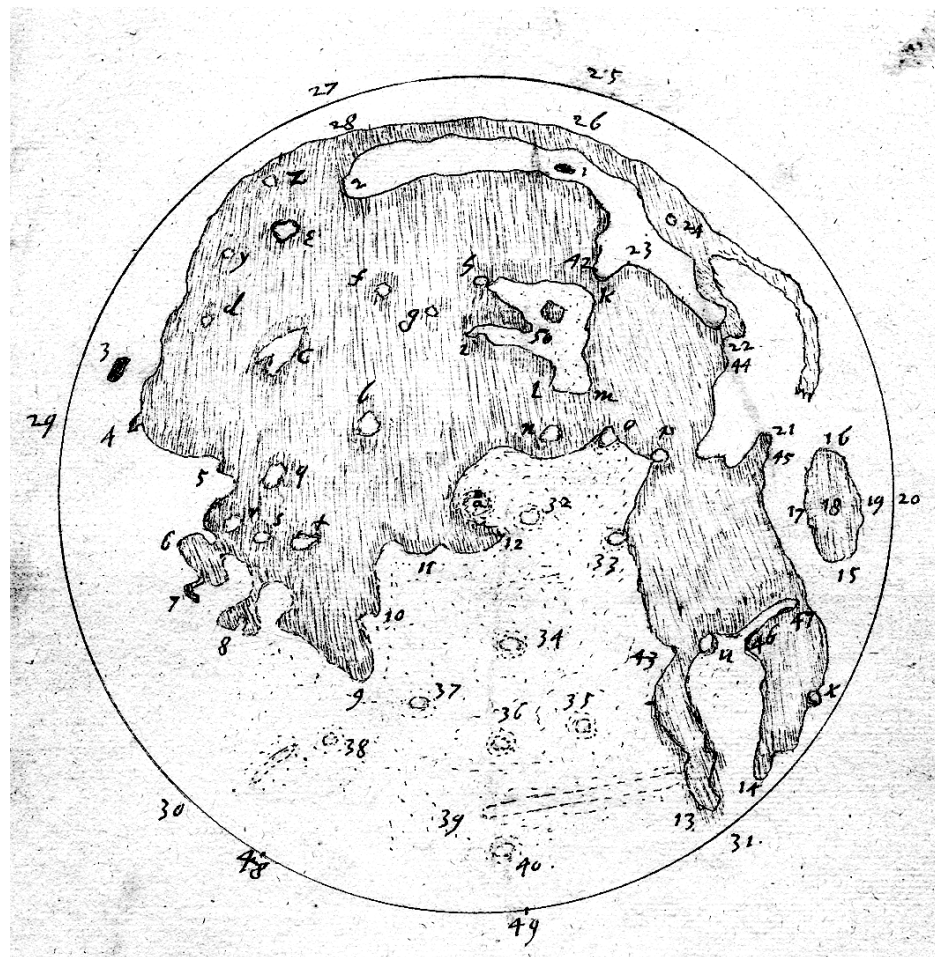


Question 3(a)(ii)**TABLE 1**

Aperture	20 cm
Focal length of objective lens	64 m
Focal length of eyepiece lens	130 cm

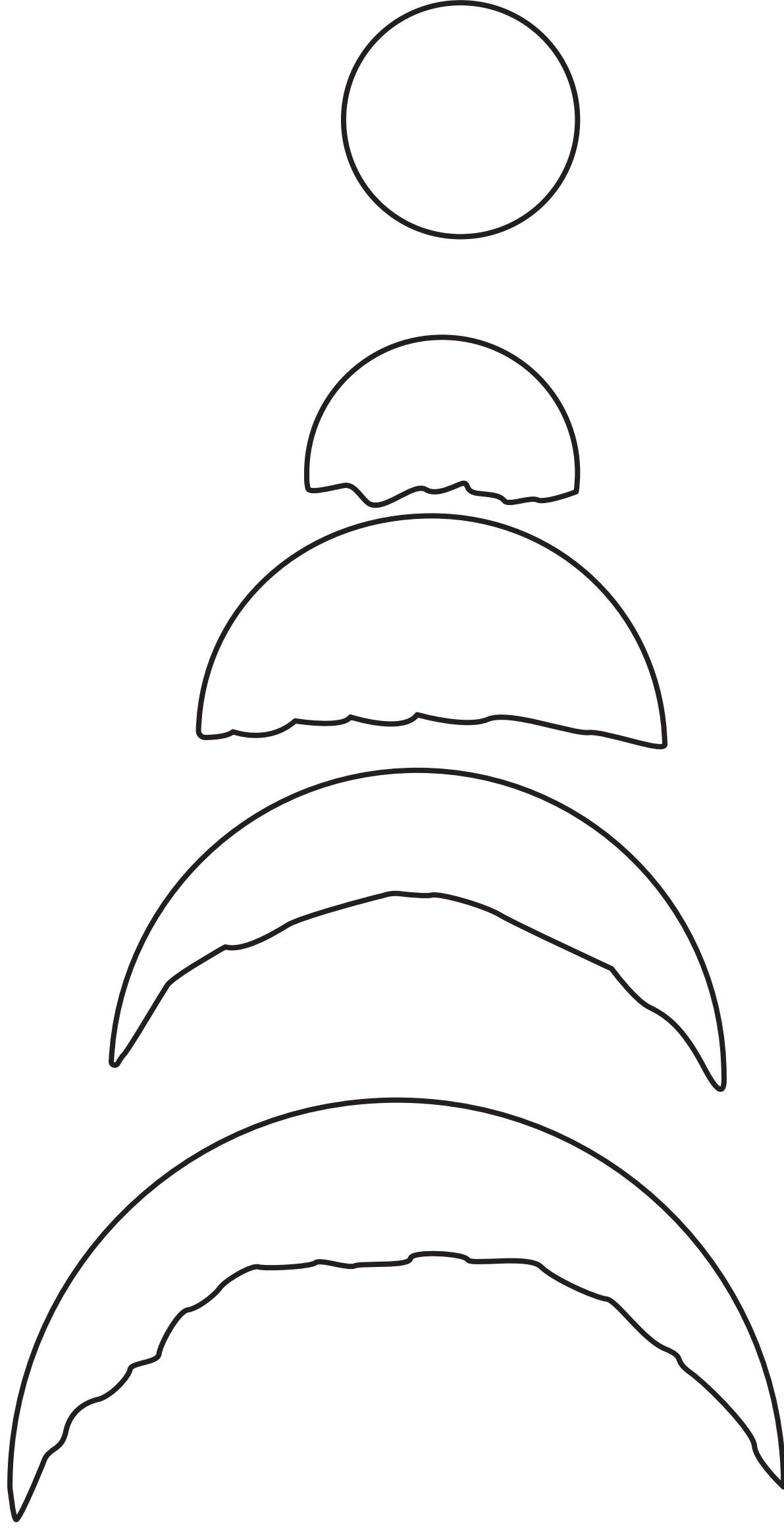
Question 4(a)

FIGURE 4



Question 4(b)

FIGURE 5

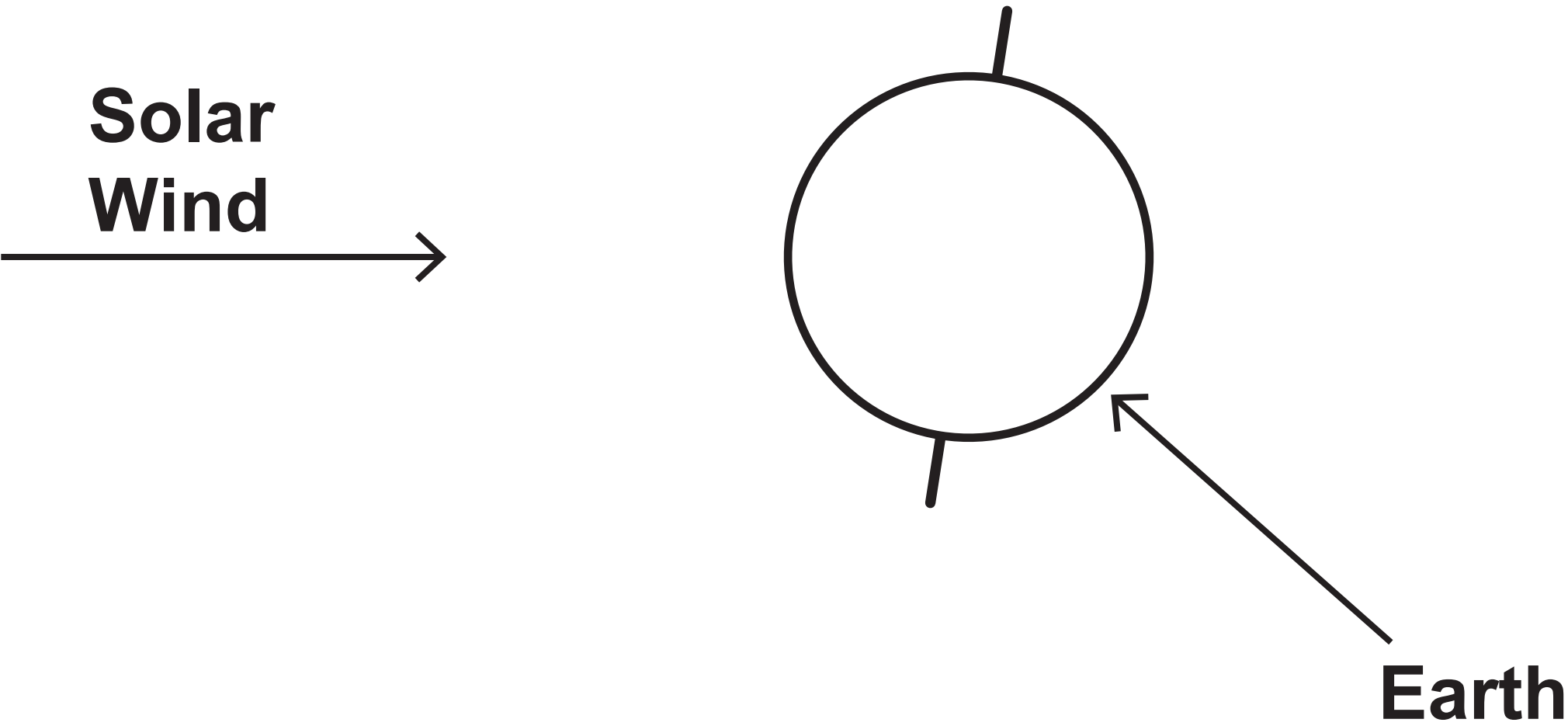


Question 4(b)(i) – Blank page

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Question 5(a)

FIGURE 6

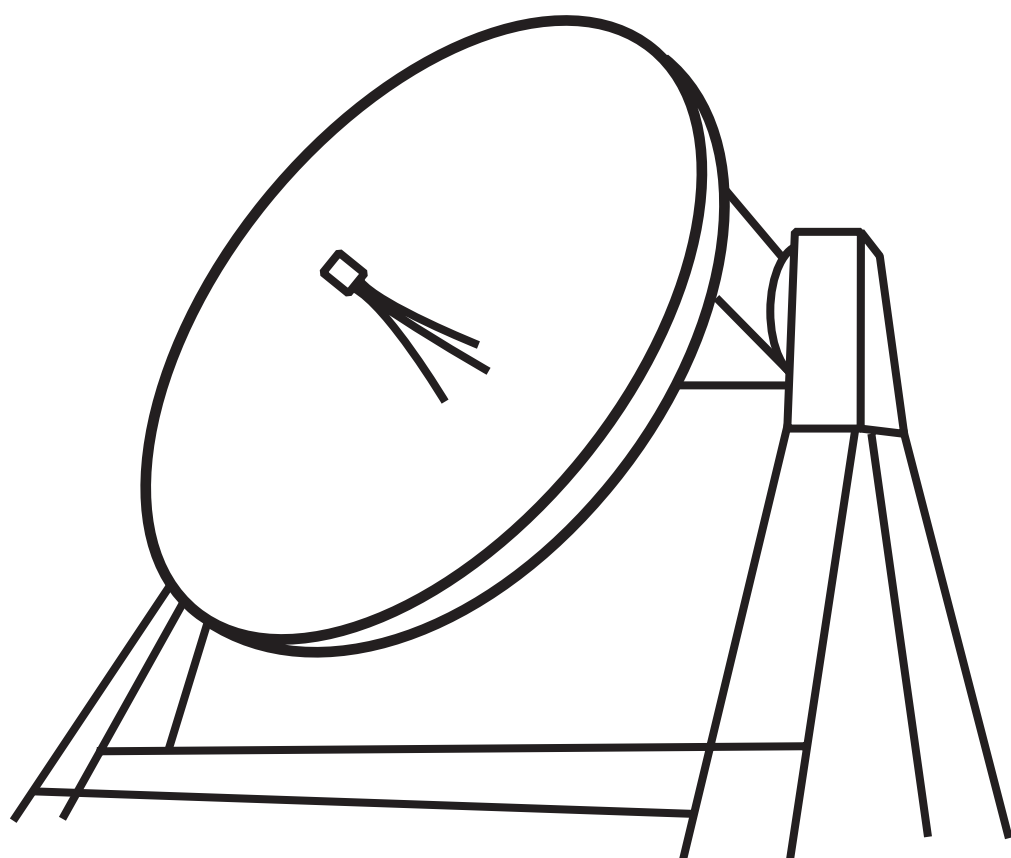


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FIGURE 7



FIGURE 7 (outline)



Question 6(b)

FIGURE 8



FIGURE 8 (outline)

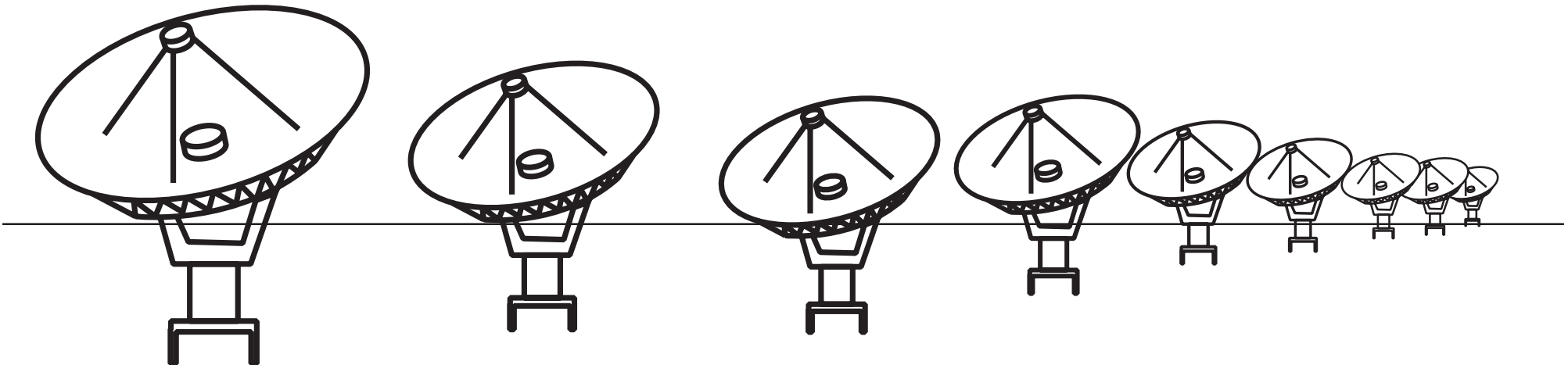
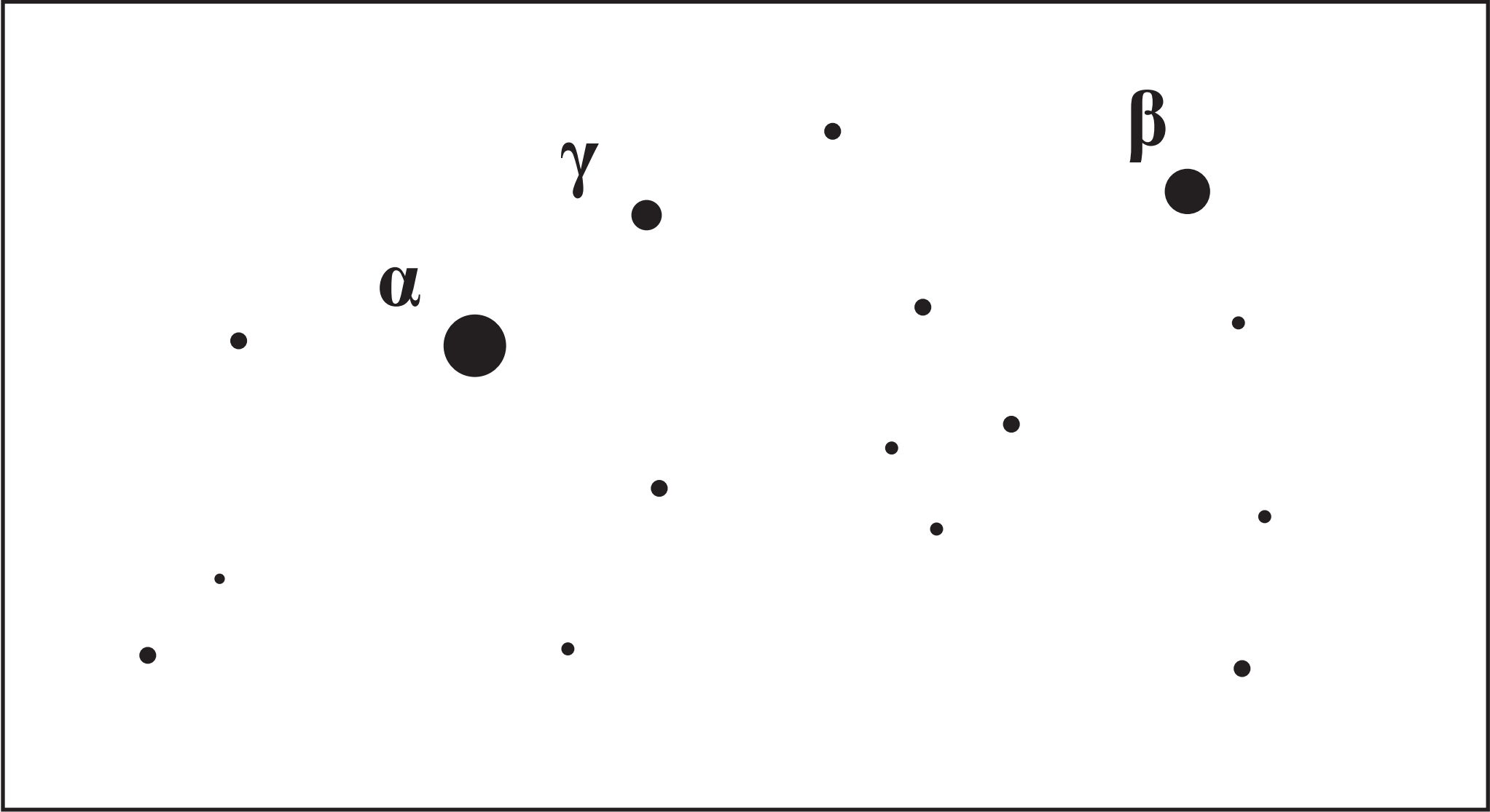


TABLE 2

Star	Apparent magnitude	Absolute magnitude	Spectral class	Mass (Sun = 1)
61 Virginis	4.74	5.07	G7	0.93
Proxima Centauri	10.5	15.6	M5	0.12
Rigel	0.12	−7.84	B8	18
Aldebaran	0.85	−0.64	K5	1.16
Sirius A	−1.46	1.43	A0	2.1

Question 7(b)

FIGURE 9



Question 8(a)

FIGURE 10

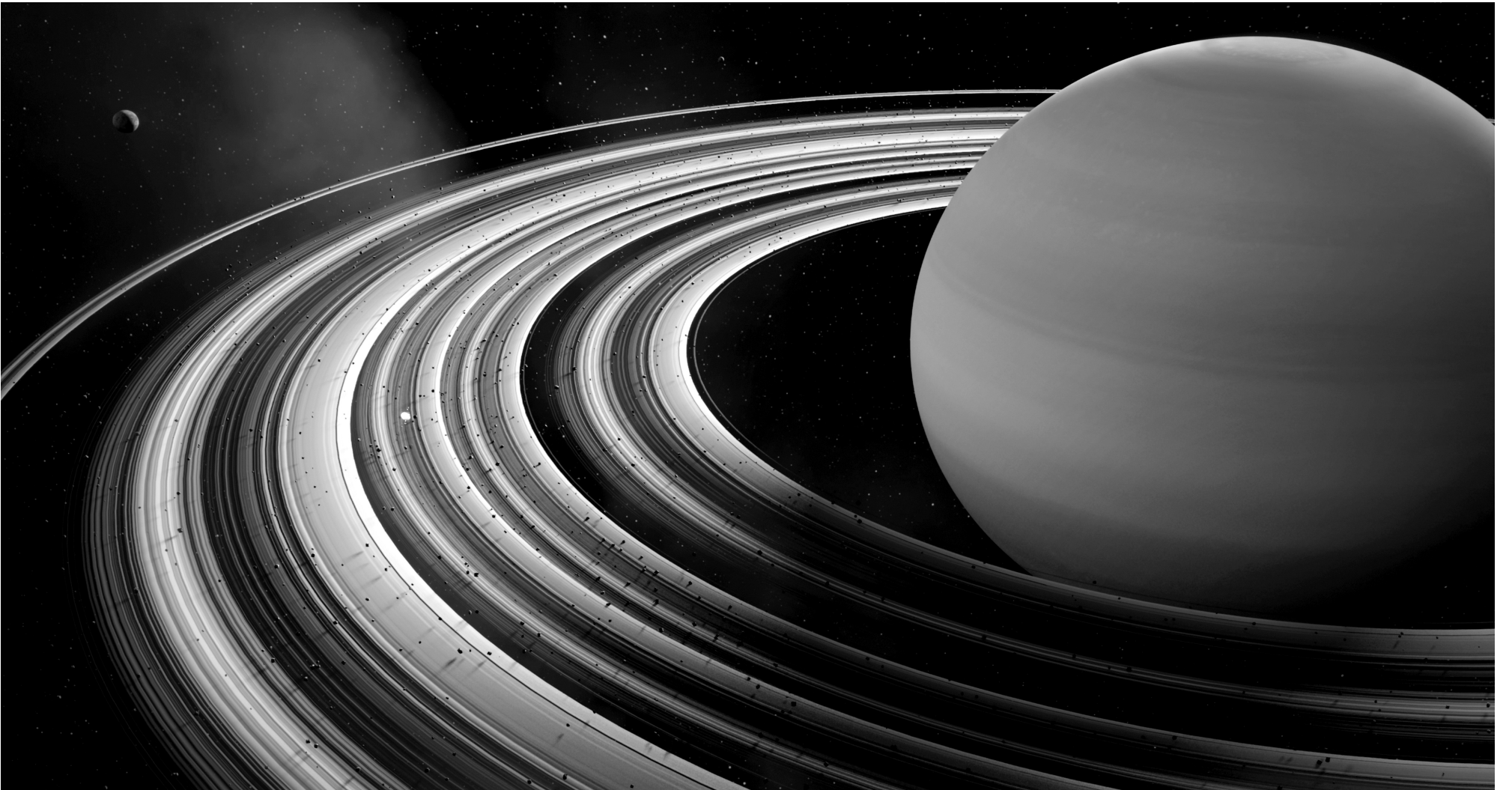
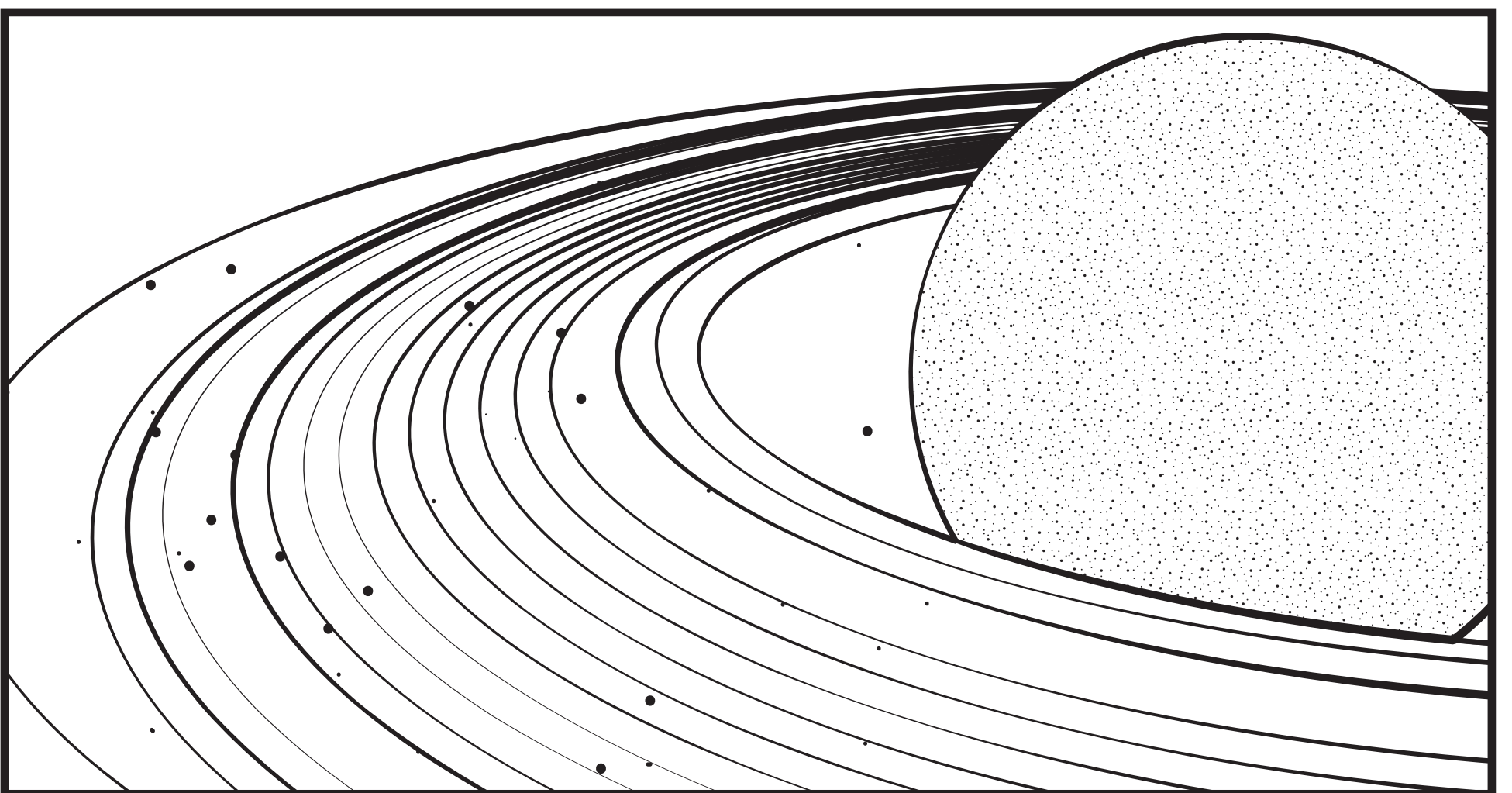


FIGURE 10 (outline)



Question 8(a) – Blank page

Question 8(b)

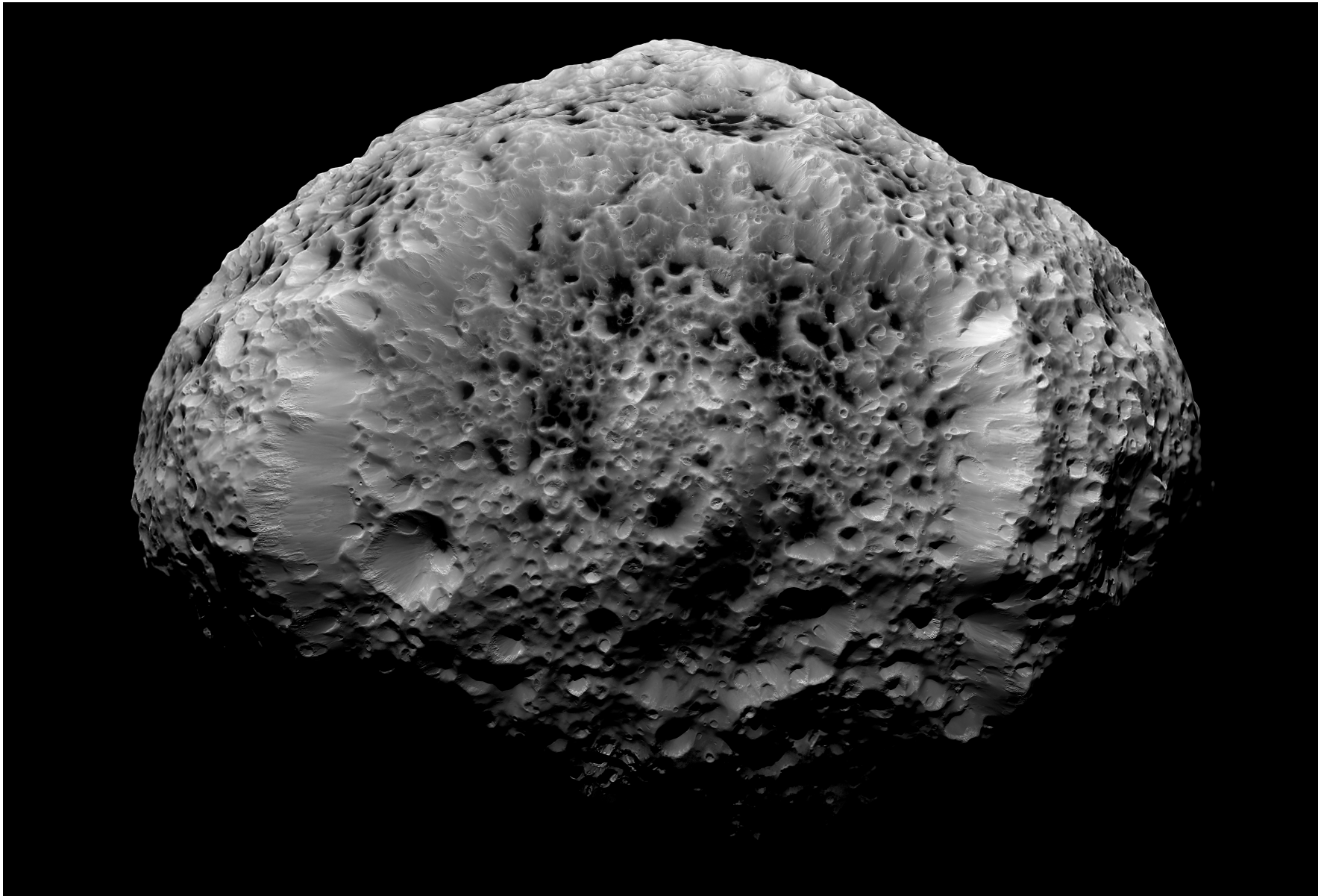
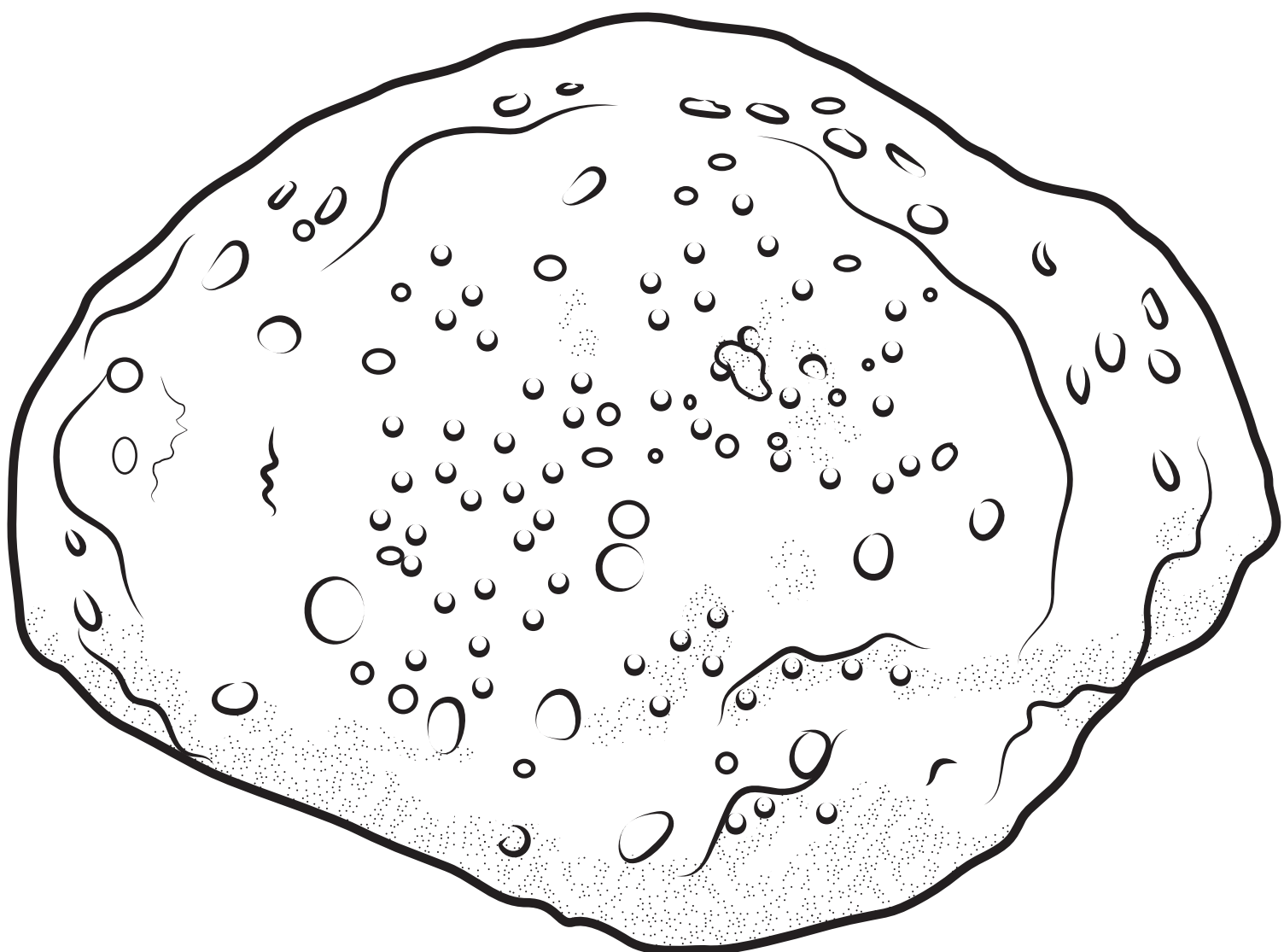
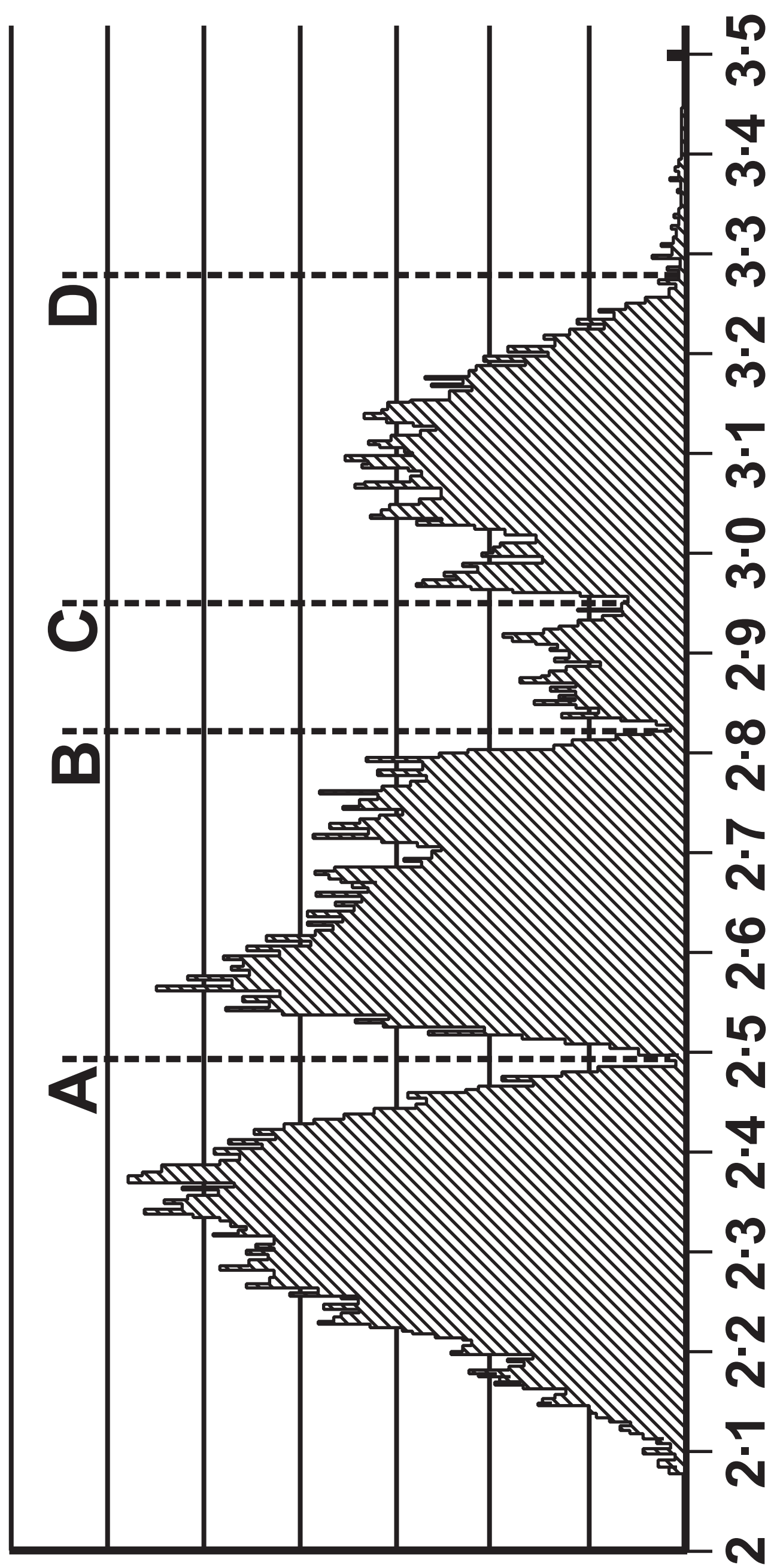
FIGURE 11**FIGURE 11 (outline)**

FIGURE 12

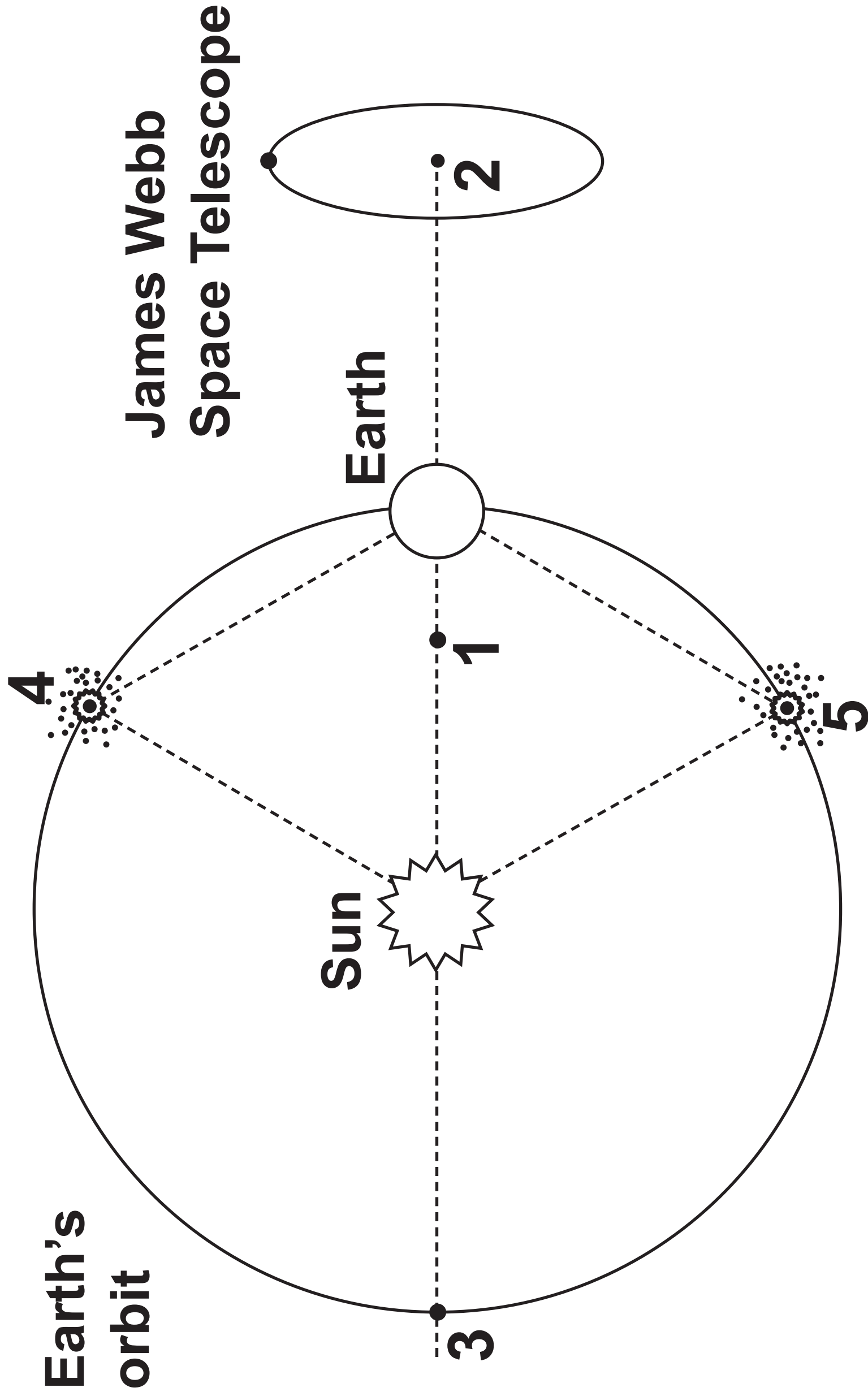
Number of
asteroids



Average orbital radius (AU)

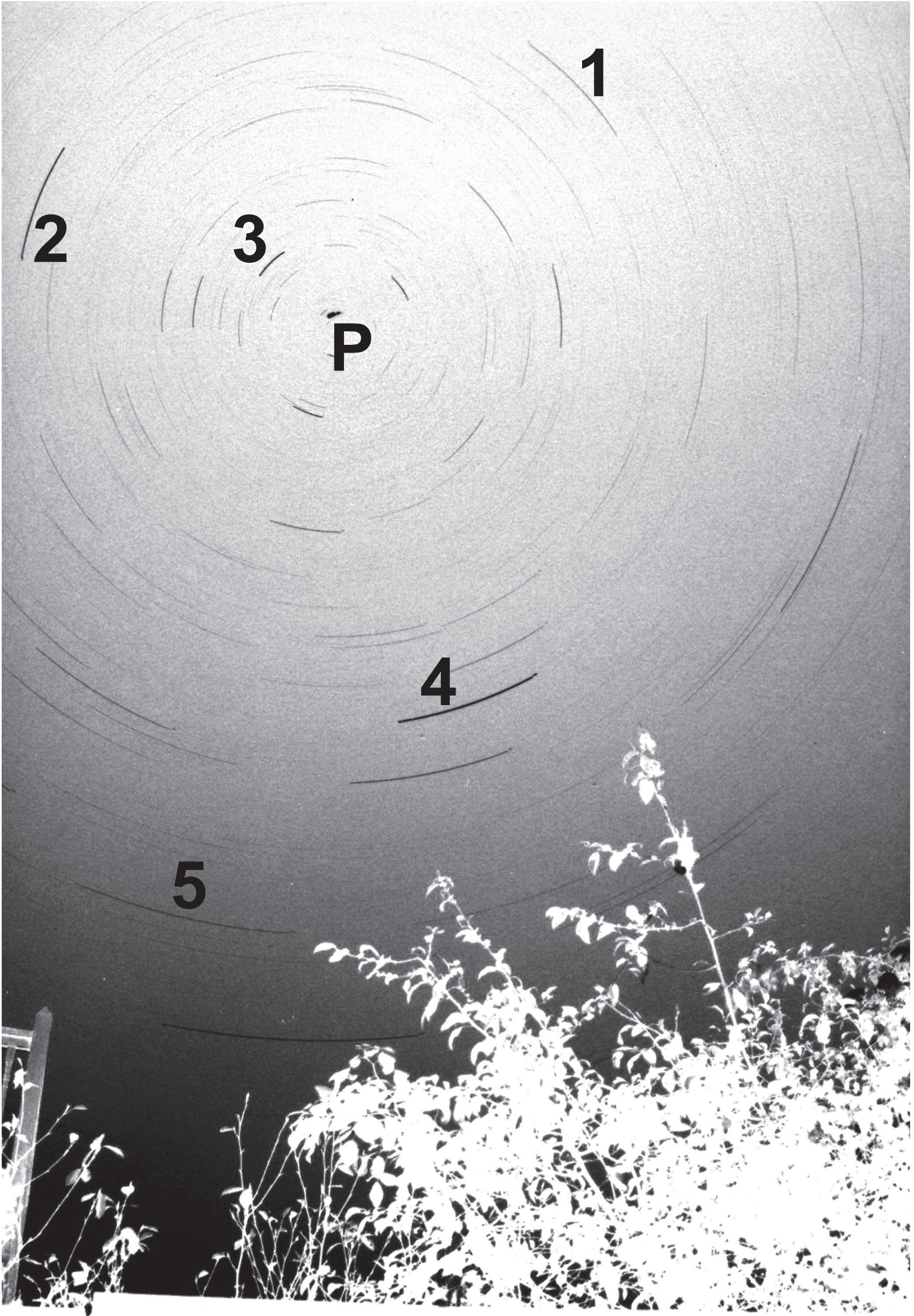
FIGURE 13

NOT TO SCALE



Question 9(a)

FIGURE 14

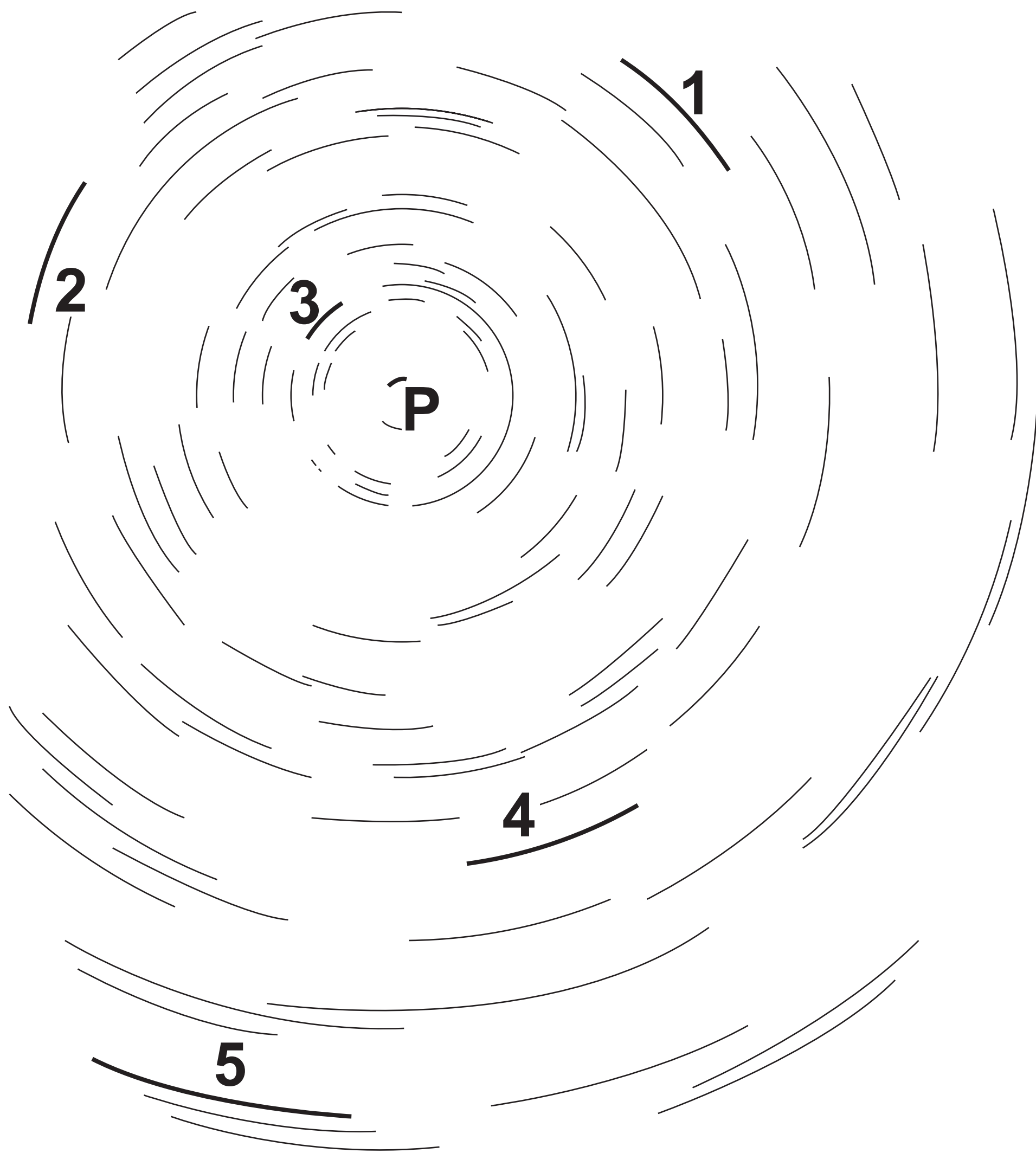


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Question 9(a) continued.

FIGURE 14 (outline)



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Question 9(a) continued.

TABLE 3

Star Trail	Angle (°)
1	23
2	26
3	28
4	24
5	25

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Question 10(b)

TABLE 4

Quantity	Estimate
Rate of star formation in the Milky Way galaxy	1·1 per year
Fraction of these stars WITHOUT planets	0·6
Average number of habitable planets orbiting each star with planets	2

Question 10(b)(ii)

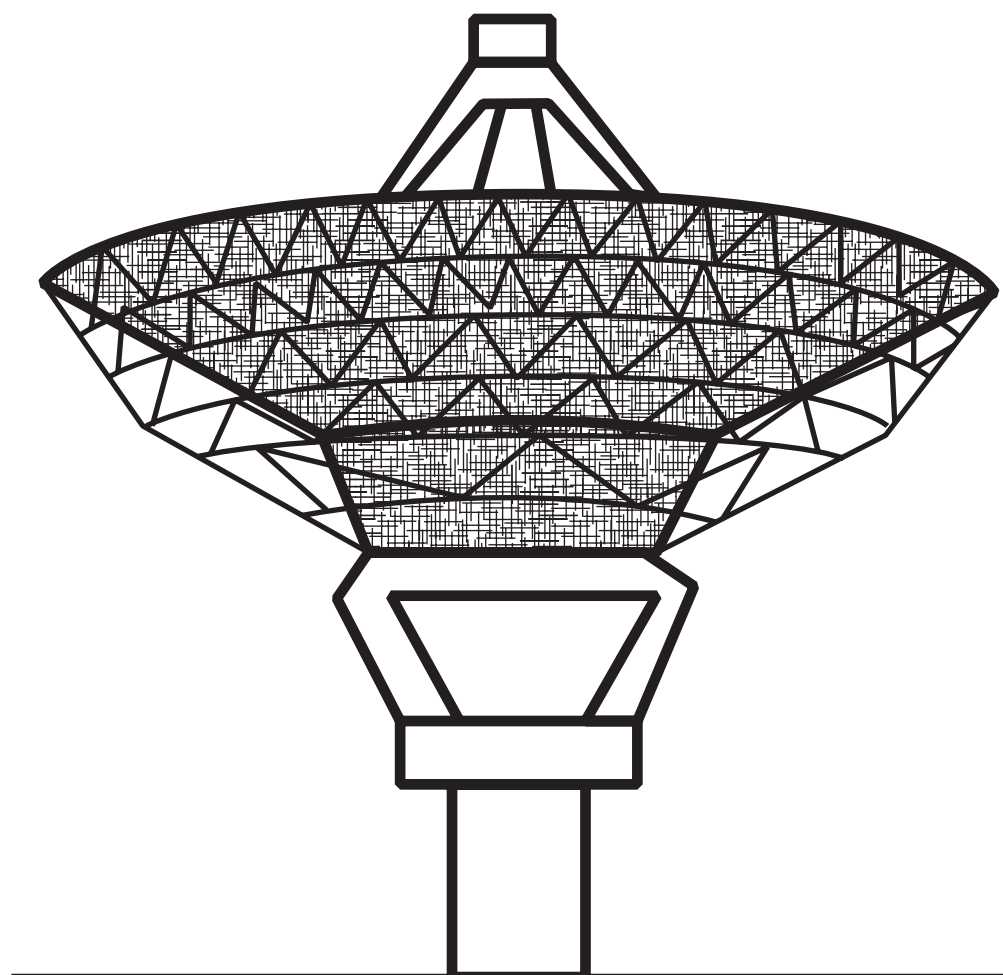
TABLE 5

Quantity	Estimate
f_l	1·0
f_i	1·0
f_c	0·15
L	50 000 000

FIGURE 15



FIGURE 15 (outline)



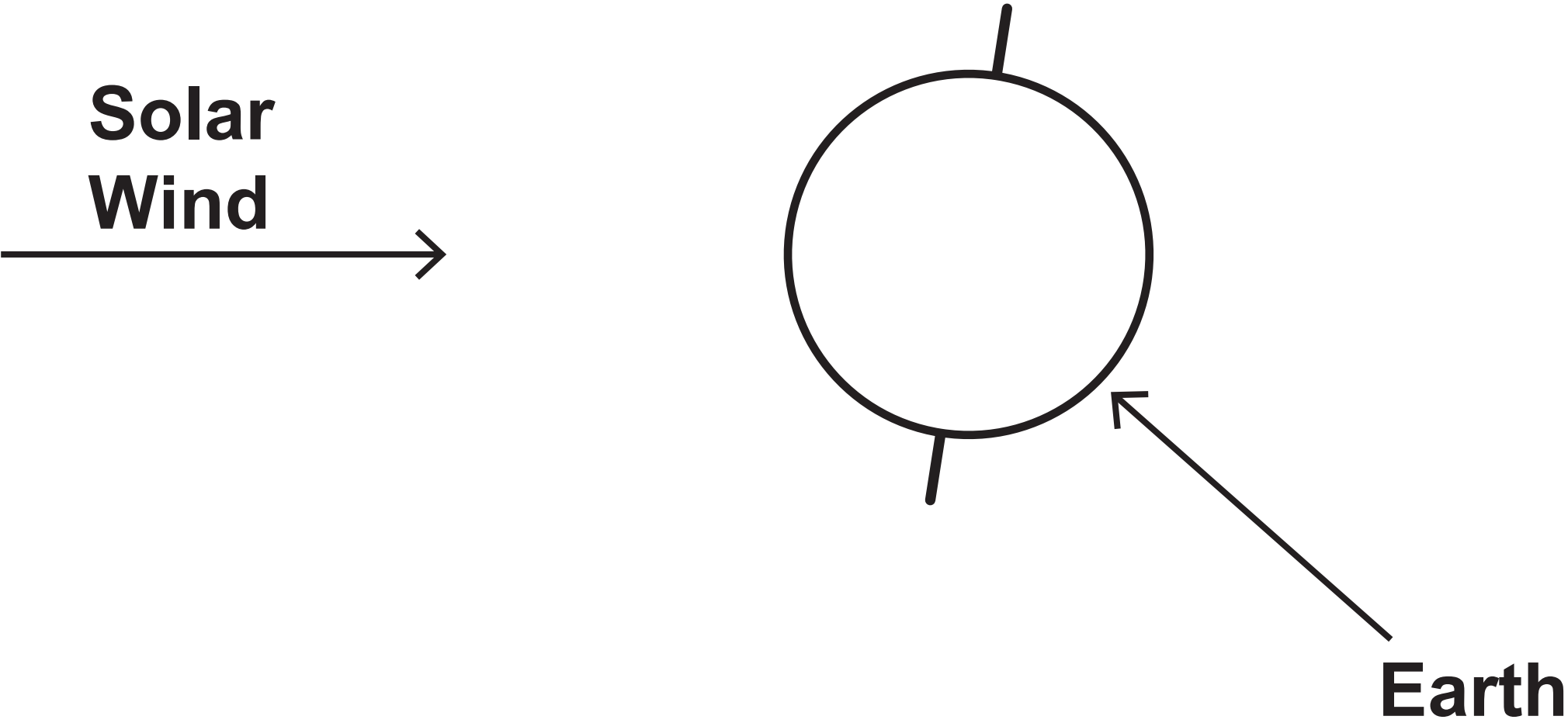
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Question 5(a)

FIGURE 6



Question 5(b)(i) – Blank page

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IMAGE CREDITS

Figure 1

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Figure 2

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Figure 7

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Figure 8

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Figure 10

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Figure 11

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Figure 15

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