August 2022
IOAA
Georgia

Night Observation

Cover Sheet

Telescope Information	
Eyepiece's field of view	45°
Eyepiece's focal length	$25mm$

O1 [15 Points]

Time Available: 3 minutes

The telescope Assistant will point the laser pointer to five objects. Choose the correct objects from the list below and write the sequence number (1-5, the order in which they were shown).
Note: Each star will be. Shown approximately for 30 seconds and not repeated.

Object	**Number**	**Object**	**Number**
Jupiter		β Her / Antilicus	
Saturn		α Oph / Rasalhague	
Mars		ε Peg / Enif	
α And / Alpheratz		α Per / Mirfak	
α Aql / Altair		α Sco / Antares	
α Boo / Arcturus		α Ser / Unukalhai	
α CrB / Alphecca		ε Sgr / Kaus Australis	
β Dra / Rastaban		β UMi / Kochab	

O2 [15 Points]

Time Available: 6 minutes

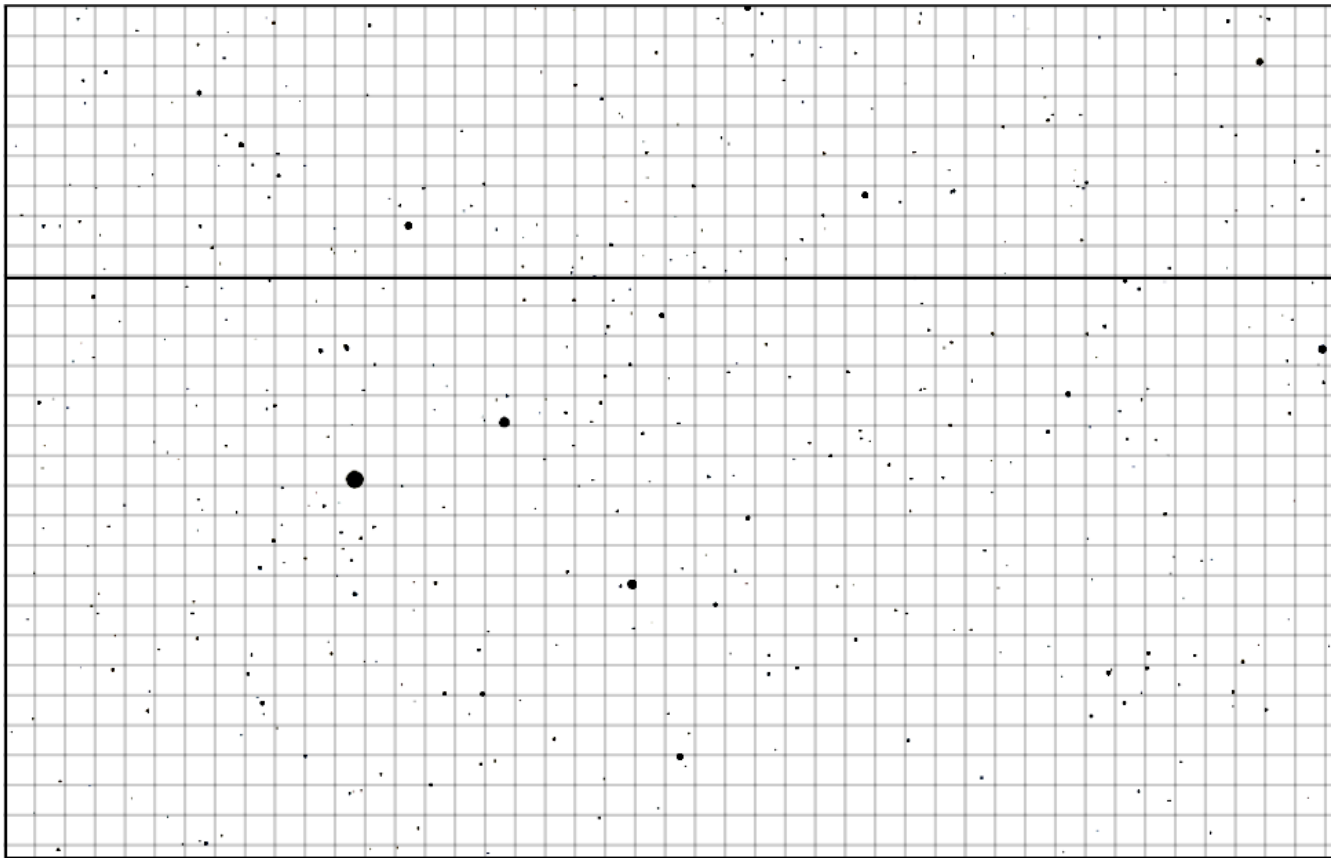
Determine the field of view FOV of the given telescope using the $25mm$ eyepiece.
Show your calculations for the method used.

O3 [20 Points]

Time Available: 6 minutes

Find below a picture of Cygnus (Cyg) constellation. β -Cyg (Albireo) is a visual binary star. Aim the telescope at this star, and estimate the acute angle between the line joining the two components of the binary and the horizontal dark line printed on the map (see fig).

Do not forget to show the resolved binary in the telescope to the telescope assistant.



O4 [10 Points]

Time Available: 5 minutes

Using the result from the previous part, determine the focal length of the telescope. Assume the apparent field of view of the $25mm$ eyepiece is 45 degrees.
Show and explain your calculations.