



ASTROCHALLENGE 2018 OBSERVATION ROUND (PRACTICAL)

5 June 2018

School:

Team members:

PLEASE READ THESE INSTRUCTIONS CAREFULLY

1. This paper consists of 5 printed pages, including this cover page.
2. You have **until 2130h** to attempt all questions in this paper.
3. At the end of the paper, submit this booklet.
4. It is your team's responsibility to ensure that all pages have been submitted.

Part I: Telescope Setup and Handling (15%)

Every error spotted during setup and handling is subjected to a penalty. Assessment ends when the telescope fully set up, the finder is aligned properly, and the telescope is pointed at an object.

Unless otherwise stated, all mistakes and errors are capped at 1.

Minor Mistakes (-1%)	Occurrences
Eyepieces/Optical elements improperly packed/stored	
Mount not placed on a fairly level surface (For Dobsonians)	
Leaving eyepieces exposed without dust caps	
Screws/bolts of mount/base not secured tightly	

Errors (-2%)	Occurrences
Bearing disks are not properly placed in to elevation bearings (For Dobsonians)	
Placing telescope on mount before counterweights are loaded (For Equatorials)	
Balancing the RA axis before the Declination axis (For Equatorials)	
Mount not aligned to the North or levelled properly (For Equatorials)	
Telescope is severely imbalanced.	
Finder is improperly secured to OTA	
Finder is improperly aligned	
Prompting required in order to proceed (no max)	

Major Errors (-3%)	Occurrences
Did not bring any eyepieces	
Touching optical elements in eyepieces with bare hands (no max)	
Dropping/Stepping on eyepieces/mount head (no max)	
Not holding on to telescope when locking knobs are unsecured	
OTA is dropped (immediate 0)	
Unable to set up telescope at all (immediate 0)	

Total Score: _____

Sign: _____

Remarks (if any):

Part II: Deep Sky Bingo (50%)

You may attempt this segment and Part III concurrently. Before you begin locating the object of your choice, you'll need to inform the quizmaster explicitly which segment you are attempting.

Rules

1. Each member is to select **only** a single row of the bingo grid – indicate your name in the leftmost cell of that row. The same row cannot be selected by multiple members.
2. All observation targets in a row can only be found by the member who selected it. Other team members may provide verbal assistance, laser guiding, etc. – **as long as you do not move the optical tube** – doing so will disqualify that target and remove it from the grid!
3. Objects in the “Bright Stars” and “Others” category must be boresighted before they are counted as found.

Scoring

1. Upon successfully bringing the whole of the target into the field of view of the eyepiece – inform the examiner; they will mark the target off on your bingo card.
2. Your team scores the number of points tied to each target observed. Clearing an entire line horizontally, vertically or diagonally grants an additional **3 points** per line.
3. The Bingo card is printed on the last page of this document.

Part III: Free-For-All (35%)

You may attempt this segment and Part II concurrently. Before you begin locating the object of your choice, you'll need to inform the quizmaster explicitly which segment you are attempting.

In this segment, you are to locate any number of objects from the list below. You may find **no more than 3 star systems** in this segment. You are also not allowed to repeat those listed in Part II.

- a. Special Stars -- white dwarves, double and multiple star systems (4 pts)
- b. Open clusters (8 pts)
- c. Globular clusters (12 pts)
- d. Galaxy (15 pts)
- e. Nebulae (no dark nebulae) (15 pts)
- f. Galaxy clusters (18 pts)
- g. Comets (20 pts)

Name/Time observed	Classification	Countersign

DEEP SKY BINGO CARD

Name of School	
Examiner	

Total Score	Bright Stars (Boresight)	Others (Boresight)	Open Clusters	Multiple Star Systems	Nebulae & Open Clusters
1	DENEbola IN LEO ①	BETA CENTAURI ①	M44 BEEHIVE CLUSTER ②	H3945 WINTER ALBIREO IN CANIS MAJ. ②	C92 ETA CARINAE NEBULA ③
2	PROCYON IN CANIS MINOR ①	VENUS ①	C94 JEWEL BOX CLUSTER ②	ACRUX ②	M47 IN PUPPIS ③
3	MIMOSA IN CRUX ①	ARCTURUS IN BOOTES ①	NGC3532 WISHING WELL ②	ALGORAB IN CORVUS ②	C102 SOUTHERN PLEIADES ③
4	ALPHA CENTAURI ①	JUPITER ①	M41 IN CANIS MAJOR ②	70 OPH ②	NGC 2362 TAU CANIS MAJORIS CLUSTER ③
5	SPICA IN VIRGO ①	ANTARES ①	C76 FALSE COMET ②	GACRUX ②	C80 OMEGA CENTAURI CLUSTER ③