

Official Marking Scheme

Distribution of Marks for Each Round

Round No	Description about the Round	Marks
01	Sun Observation Theoretical Round	100
02	Observational Astronomy Theoretical Round	100
03	Jupiter Observation Session	100
04	Saturn Observation Session	100
05	Moon Mapping	100
06	Deep Sky Observation	100
07	Constellation Mapping	150
08	Viva Test of Observational Astronomy	50
09	Spot Test on Observational Astronomy	50
10	Multimedia Based Data Analysis + Spectral Analysis	150
	OVERALL MARKS	1000

Useful data for Marking Officials

- ❖ Date : 18th January 2013
- ❖ Observer's Location : Peradeniya , Sri Lanka
- ❖ Longitude : 80.6° E (79 E– 82E Approved)
- ❖ Latitude : 7.3° N (6N – 10E Approved)
- ❖ Elevation : Neglectable for marking
- ❖ LCT to UT Conversion : $UT = (LCT - 05h\ 30\ min) / Time\ Zone : +5.5\ h$
- ❖ Seeing : Observer should keep in Antoniadi Scale

I	Perfect seeing, without a quiver
II	Slight quivering of the image with moments of calm lasting several seconds
III	Moderate seeing with larger air tremors that blur the image
IV	Poor seeing, Constant troublesome undulations of the image
V	Very bad seeing, hardly stable enough to allow a rough sketch to be made

❖ Moon Data :-

- Constellation : Pisces
 - RA : 1h 26 min
 - Dec : 12°01'
 - App. magnitude : (- 10.8)
 - Moon Phase : First Quarter (Waxing Quarter)
 - Calculated Phase : 46 %
 - Moon Age : 6.9 days (approximately 7.0 days)
 - Rises : 1127 h
 - Culminates : 1740 h
 - Sets : 2353 h
-

❖ Jupiter Data :-

- Constellation : Taurus
 - RA : 4h 19 min
 - Dec : 20°46'
 - App. magnitude : (-2.2)
 - Rises : 1427 h
 - Culminates : 2037h (19th January)
 - Sets : 0237 h
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❖ Saturn Data :-

- Constellation : Libra
 - RA : 14h 36 min
 - Dec : (- 12° 45')
 - App. magnitude : (+ 0.8)
 - Ring Tilt Value : (+19.2)
 - Rises : 0059 h
 - Culminates : 0652 h (19th January)
 - Sets : 1245h (19th January)
-

$$\text{Hour Angle} = \text{Cos}^{-1} \left[\frac{\text{Cos} (90 - \text{Alt}) - \text{Cos} (90 - \text{Dec}) \times \text{Cos} (90 - \text{Lat})}{\text{Sin} (90 - \text{Dec}) \times \text{Sin} (90 - \text{Lat})} \right]$$

NOTICE !

All the Observation Reports on Star Party 2013 Competition are prepared under the International stands of submitting observation reports , published by the British Astronomical Association (BAA) & American Association of Variable Stars Observers (AAVSO)

➤ Marking Scheme For Viva Test

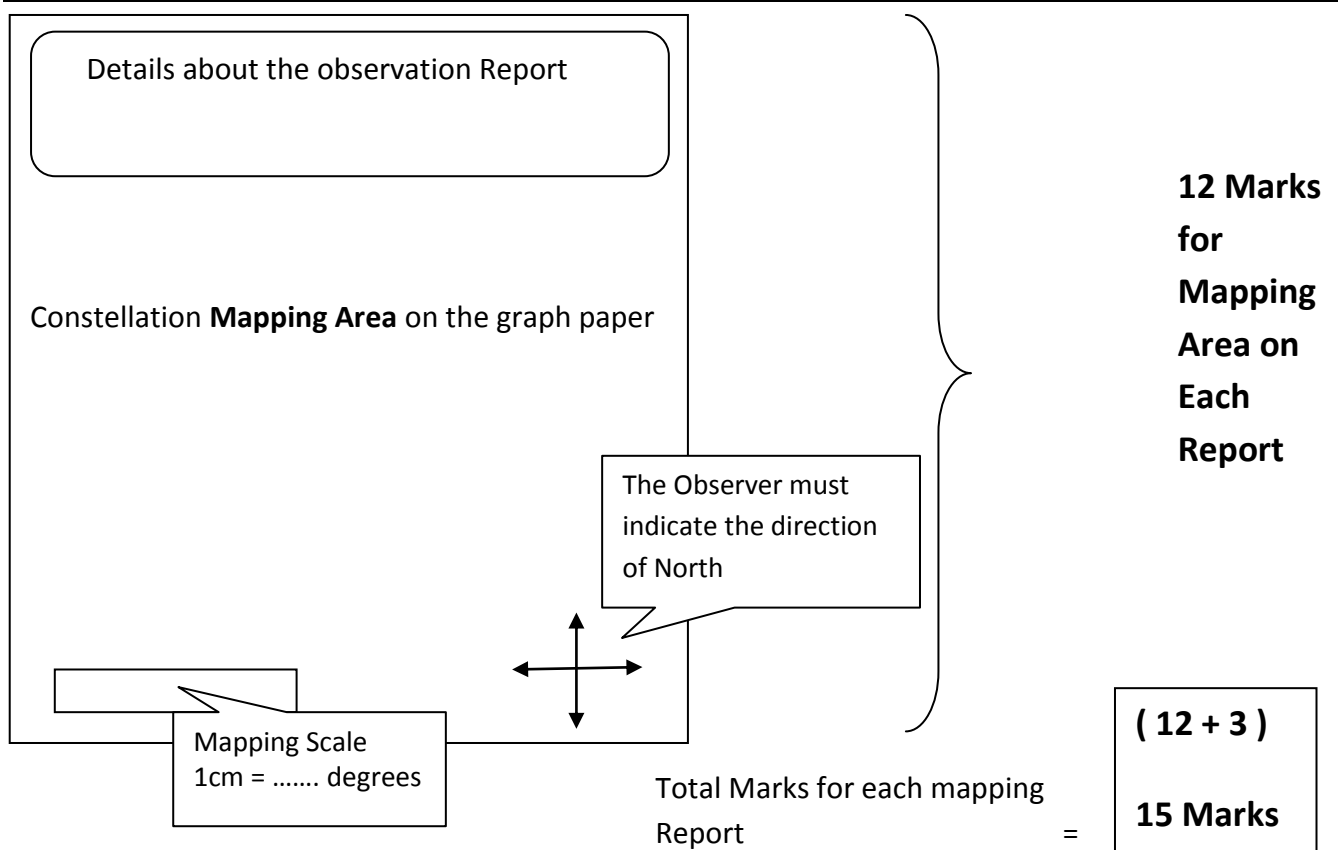
No	Main Topics	Marking official should Consider about following facts	Marks
01	Physical Data of their group Telescope	Aperture / focal length / eyepieces/ Current magnification / Telescope Type / Mounting System	10
02	Description on how to prepare a telescope before observing objects	Keeping tripod in correct position/ leveling the axis/ leveling the finder scope/ Adjusting polar axis , Equatorial axis, declination axis using reference stars method	10
03	Mounting skills of the contestants	<ul style="list-style-type: none"> • The Marking official may select a celestial object using a laser pointer and the contestant may direct the telescope to the object. • The contestant may use the finder scope to mount the object in the visual field. • The object must be located in the center of the crosshair in visual field. • The contestant must mount the object within 3 minutes • The contestant may used most appropriate ocular (Eyepiece) to observe the object { wide angle/ Barlow) 	10
04	Identifying Celestial objects	While the marking official will be pointing 5 objects , the contestant should identify those objects	5 X 2 =10
05	Describing about modern observational equipments and methods	CCD imaging/spectrum analyzing / finding exoplanets/ Interferometers/ Neutrino detectors/ Adaptive Optics/ Active Optics	10
06	Bonus & Additional Marks	Marking official may inspect their group telescope/ tripod/ scale adjustments/ balancing and give bonus marks (Maximum 10)	10

Total marks for viva test = 50+ bonus 10

➤ Marking Scheme for Constellation Mapping Session

- Every Team should mention the following details with every submitting observation report.

Detail	Description about the detail	Marking Officials Guidelines	Marks
Name:	Name of the student		3 Marks For each Report
Location:	(Kandy) or (Peradeniya) , Sri Lanka	No marks without "Sri Lanka"	
Date :	18 th January 2013	In any format	
Time:	Start =UT Finished = UT	No marks for LCT time format	
Constellation:	Name of the mapping constellation	In English or Sinhala	
Altitude & Azimuth:	Altitude & Azimuth of the center of Constellation, when observer starts mapping		
Seeing	Astronomical Seeing in "Antoniadi" or (another standard scale)		
Observational Notes	Brief description about the observation		





Further Guidelines for Marking officials

- Every Team should submit at least 8 Constellation mapping reports. (Minimum number is 8). If any team will submit more than 8 reports Marking officials should mark every report and SELECT 8 REPORTS THAT HAVE HIGEST MARKS to enter to the marks list.
- If the observer will be drawn deep sky objects such as (Nebulas, Galaxies, Messier objects in the constellation mapping area, Give MINUS MARKS for that. (drawing those objects inside constellation mapping area is unrecognized format). But the observer can mark those Deep Sky Objects (IF THEY CAN BE SEEN IN NAKED EYE) by using standard symbols .
Eg : - Observer can mark Orion nebula (by a Symbol) in its position (at the constellation of “Orion”) in his/her constellation mapping drawing. But drawing Orion nebula IS NOT ACCEPTABLE !
- **Maximum Minus marks that can be given for each report is (-2)**
- Observers should make a Relative apparent magnitude scale and show it on at least one observation report. IF it missing (**- 3**) marks will be added to Total marks of this session
- The student must indicate the brightest star in each constellation which they will draw.
- Sizes of dots (marks) which represent stars on the drawing is proportional to its apparent magnitude. Marking officials should specially consider about above fact
- Specially consider about distances within stars of the constellation



Distribution of Marks :-

	Marks for each one report	Marks for 8 reports
Details about the observation Report	3 Marks	3 X 8 = 24 Marks
Maks for the Mapping Area (Observational techniques & Mapping skills)	12 Marks	12 X 8 = 96 Marks
Bonus marks for completion report + Additional Bonus Marks ★		30 Marks
Total Marks For Constellation Mapping session		150 Marks
Maximum Minus marks	(-2)	(-2) X 8 = - 16 – 3 = (-19)

➤ Marking Scheme for Deep Sky Observation Session

- Every Team should mention the following details with every submitting Deep sky observation report.

Detail	Description about the detail	Marking Officials Guidelines	Marks
Name:	Name of the student		3 Marks For each Report
Location:	(Kandy) or (Peradeniya) , Sri Lanka	No marks without "Sri Lanka"	
Date :	18 th January 2013	In any format	
Time:	Start =UT Finished = UT	No marks for LCT time format	
Deep Sky Object :	Name of the Deep Sky Object (DSO)	In English or Sinhala	
Constellation:	Constellation of the DSO		
Type of the object :	Type of the DSO Ex: Galaxy (G)/ Emission Nebula (EN) / Planetary Nebula (PN)/ Open Cluster (OC)/ Globular Cluster (GC) Etc...		
Altitude & Azimuth:	Estimated Approximate Altitude & Azimuth of DSO when the observer starts observation	+or- 5 degrees approved	
RA and Declination	Right Ascension and Declination by Star Chart		
Telescope details	Telescope Type (Reflector, Refractor or Catadioptric) Aperture / Focal Length / Used Occular (Eye Piece) for drawing DSO / Total Magnification / Eye piece type	The observer must specially mention the type of the eyepiece	
Seeing	Astronomical Seeing in "Antoniadi " or another standard scale.		
Observational Notes	Brief description about the observation		

Further Guidelines for Marking officials

- Every Team should submit at least 8 DSO Observation reports. (The minimum number is 8). If any team will submit more than 8 reports, Marking officials should mark every report and SELECT 8 REPORTS THAT HAVE HIGEST MARKS to enter to the marks list.

DEEP SKY OBSERVATION FORM

CONSTITUTION: ERIDANUS OBJECT: NGC 1535

SAMPLE REPORT (points to the central star)

Mapping Area (points to the surrounding nebula)

Date: 13/1/07 Seeing (1-10): 7
 Time (local): 23:50 Transparency (1-5): 3
 Time (UT): 12:50 Limiting Magnitude: 4.5
 Observer: _____ Temp: 15°C Wind: -
 Location: Bonville, Vic 38°01' E 145°19' Dew: -

INSTRUMENT OBJECT

Aperture: 250mm RA: 04h 14.2
 Focal Length/Ratio: 1250mm F5 Dec: -17° 44
 Telescope Type: NEWT Type: Planetary Neb
 Eyepiece: 5mm LVW + 2.5x P/MATE Magnitude: +11
 Magnification: 625x Size: 71"
 Filter Type: - Altitude of Object: _____

NOTES

Fuzzy dot at low powers. Inner ring well resolved at 357x, with faint outer halo. Some detail within central region at 625x. Greenish colour evident at high power.

12 Marks for Mapping Area on Each Report



Distribution of Marks :-

	Marks for each one report	Marks for 8 reports
Details about the observation Report	3 Marks	3 X 8 = 24 Marks
Maks for the Mapping Area of DSO report (Observational techniques & Mapping skills)	7 Marks	7 X 8 = 56 Marks
Bonus marks for completion report + Additional Bonus Marks ★		20 Marks
Total Marks For Constellation Mapping session		100 Marks
Maximum Minus marks	00	00

★ Bonus Points for the completion at Constellation mapping & DSO observation Report are given by a Academic committee senior Insatrutor by compairing all observation reports from all schools by considering observational techniques , mapping skills and submitting performances of the observation repots

