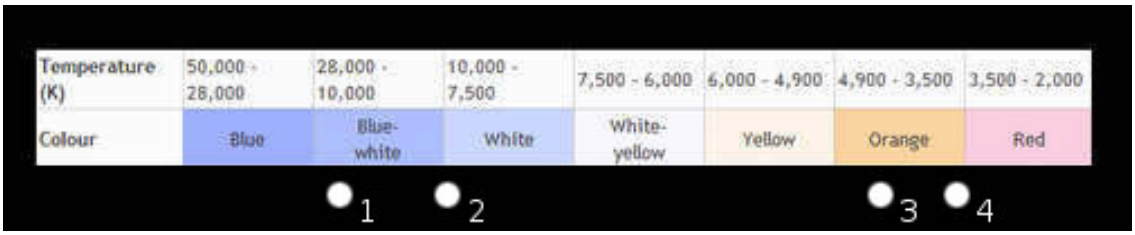
Introduction to the Night Sky

Roger Chapronière

Question1

a) Compare and contrast the colours of Arcturus, Regulus, Spica and Delta Virginis.
b) Identify the separate components of the binary gamma Virginis. As usual make a sketch of what you see indicating orientation, date, time and location from which your observation was made.

Answer (a)

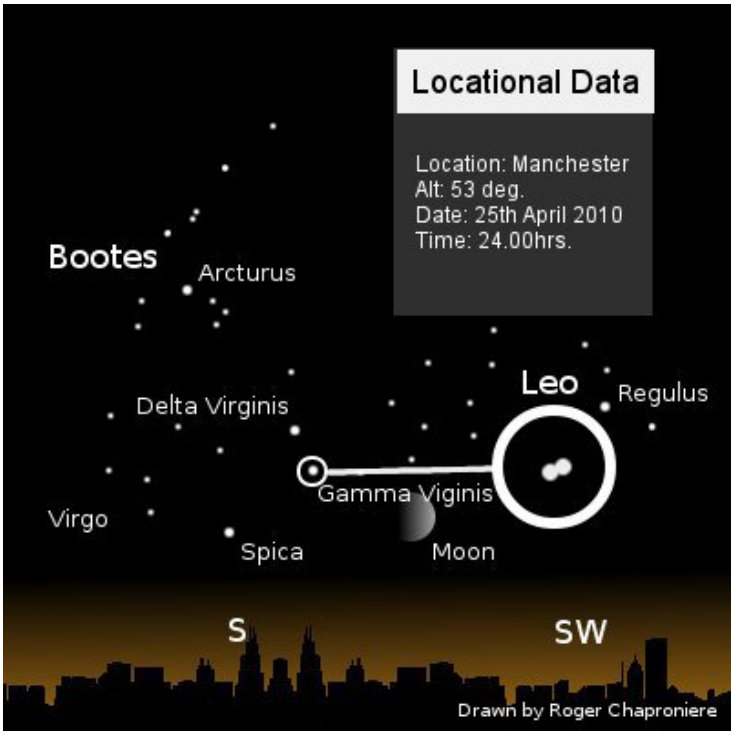


Star	ID	Details
Spica	1	A binary star where both primary and secondary are B class and are very close together. The primary is a hot 22,400K and is therefore, observation ally blue in colour.
Regulus	2	This B class star has a very fast rotational speed making it oblate in shape. The poles radiate at 15,400K and the equator at 10,200K giving it it's blue-white colour
Arcturus	3	A K class star with a surface temperature of 4,290K. Although it shines some 113 times brighter than the Sun much of its radiation energy is in the infrared.
Delta Verginis	4	The coolest of the 4 featured stars, this M class star is big with a radius of 61 times that of the Sun. The low surface temperature of 3,720K gives it a red-orange colour.

Answer (b)

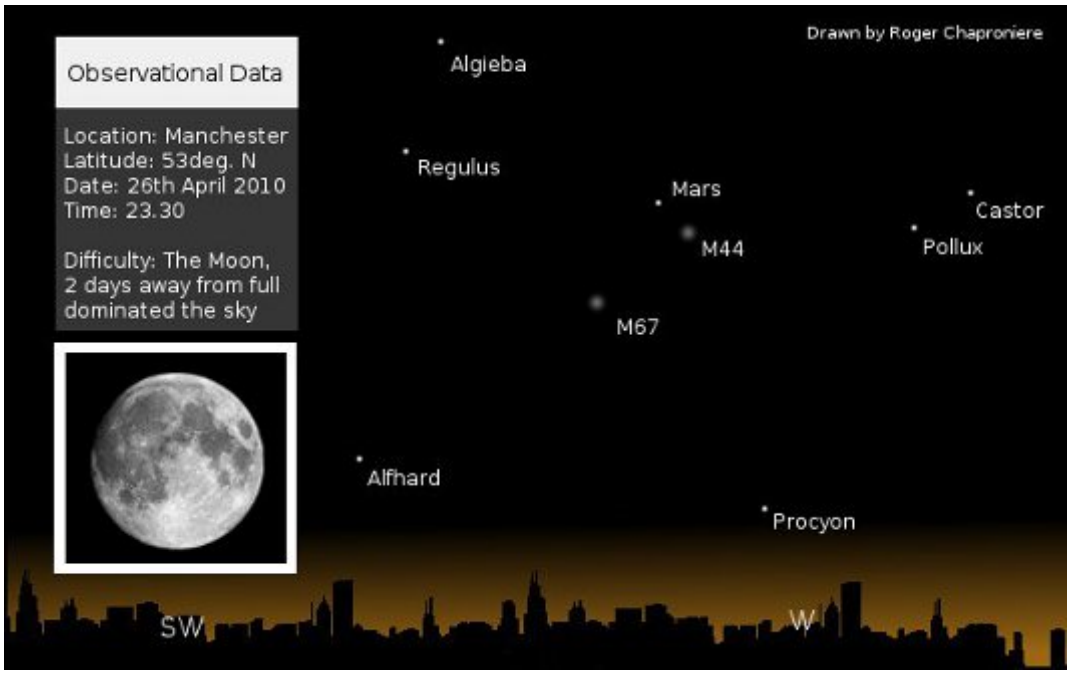
Graphic of the Bootes/Leo/Virgo constellations with the position of the binary star Gamma Virginis. The Moon has been shown on this graphic to describe the observational difficulties. This is something to revisit when the moon is less of a problem. To ensure that I was able to prove that I had investigated the question I used Starry Night Enthusiast to determine the orientation of the Gamma Virginis.

Question 1 cont.

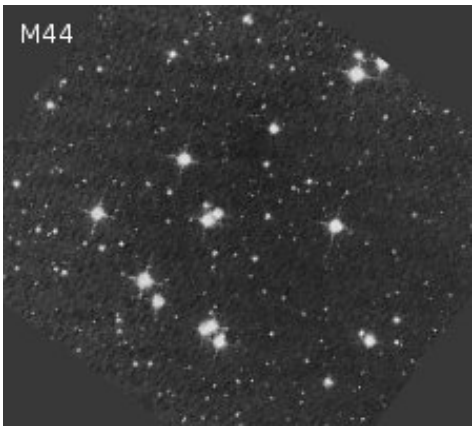


Question 2

Sketch the appearance of these clusters either from your visual or binocular observations.



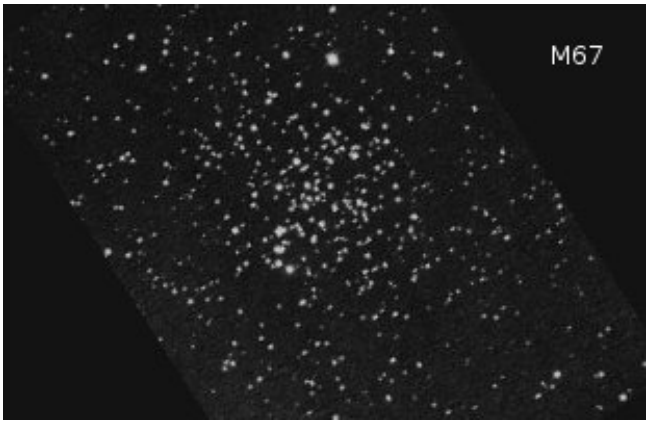
Answer 2 cont.



As demonstrated in the previous graphic the nearly full moon played havoc with observations. Indeed the Moon was just 7°arc away from Spica. To ensure that I was able to prove that I had investigated the question I used Starry Night Enthusiast to locate and fix the position of both M44 and M67.

On the couple of nights I tried to make observations I was able to locate all of the Stars in the graphic including the planet Mars. The images of the open clusters, M44 and M67, which were unobservable, were obtained from the SEDS web site. I have reorientated the graphics to reflect how they would appear at at the latitude of Manchester

It is my intention to revisit these open clusters in a couple of weeks time when the Moon is no longer a problem.



All Graphics are low resolution from the web-site

DATA SOURCES CAN BE OBTAINED FROM THE WEB-SITE

Coursework Submission Title. Exploring the Universe - Assignment 2

Tutor this work is for.... Stacey Harbergham

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I confirm that I am aware of the University Modular Framework Assessment Regulations (Section D Appendix C) regarding academic impropriety and that the work submitted conforms with those Regulations. I confirm that the coursework is my own and that all sources consulted have been appropriately acknowledged. I am aware that, in case of doubt, I may be required to take a viva voce examination.

Signature of Student: .....

Date: 29th. April 2010