

# **Physics 10293 Online Lab #1: The Origin of the Constellations**

**Due Date: Thu Apr 2, 11:59pm CDT**

## **Online Lab Instructions**

Although we will not be doing these labs together in the classroom, please remember as you work through this that you are not alone. Your lab instructor will be happy to help answer any questions you have about the lab, either via email or in the discussion forum on your D2L course shell.

Ideally, you should print out this lab, answer the questions, and then scan it or take pictures of each page, and send that completed work to your TA by the deadline. If you are unable to print out the lab, please just answer each question on your own paper and submit that work to your TA by the deadline.

## **Introduction**

In this lab, we will study the research compiled by Ian Ridpath in his online book, "Star Tales," to help understand the origin of the modern-day constellations. I have organized several questions about the first two chapters of this reading below and included sufficient space for you to write your answers. There will be no essay with this lab.

**Chapter 1, Page 1a**

(<http://www.ianridpath.com/startales/startales1a.htm>)

The constellations we use today were first published as a set by Ptolemy in his book known as the Almagest. Explain the two lines of evidence (one of them written, one of them having to do with the gaps in the star maps) that many of the constellations in Ptolemy's book likely originated from the Babylonian civilization that existed about 800 years prior to Ptolemy's era.

**Chapter 1, Page 1b**

(<http://www.ianridpath.com/startales/startales1b.htm>)

Describe the evidence for and against the hypothesis that the Minoan civilization centered on the island of Crete was the primary source of constellations recognized by the Greeks and Ptolemy.

Describe the role of the Arabic astronomer Al-Sufi (or Azophi) in the creation of the constellation and star names we use today.

**Chapter 1, Page 1c**

(<http://www.ianridpath.com/startales/startales1c.htm>)

Explain the origin of two large constellations in the Northern celestial hemisphere: Camelopardalis and Monoceros.

What was the role of Petrus Plancius in filling in the Southern Celestial hemisphere with 12 new constellations, previously uncharted?

**Chapter 1, Page 1d**

(<http://www.ianridpath.com/startales/startales1d.htm>)

Explain the role of Johannes Hevelius in the modern set of recognized constellations.

Explain the role of Lacaille in the modern set of constellations.

Why are there so many constellations named after scientific instruments (e.g. Telescopium, Microscopium) in the Southern celestial hemisphere?

Describe how the current officially recognized boundaries for the constellations were drawn.

**Chapter 2, Page 2a**

(<http://www.ianridpath.com/startales/startales2a.htm>)

What is the Farnese Atlas? Explain its historical significance.

What is the Dunhuang star chart? Explain its historical significance.

Explain how the themes and names of Chinese constellations differed from Western constellations.

**Chapter 2, Page 2b**

(<http://www.ianridpath.com/startales/startales2b.htm>)

What is the Uranometria? Explain its historical significance.

What are Bayer letters, and how were they usually assigned to specific stars?

**Chapter 2, Page 2c**

(<http://www.ianridpath.com/startales/startales2c.htm>)

What are Flamsteed numbers, and where did they originate?

Explain the origin of simpler line diagrams connecting bright stars on published maps as opposed to the more elaborate pictures that had been the norm.



**Chapter 2, Chinese Constellations (linked on page 2a)**  
(<http://www.ianridpath.com/startales/chinese.htm>)

Explain how the Chinese constellations originally organized the sky. In particular, describe lunar mansions and the four-part zodiac.

Explain two reasons why it is very difficult to determine the identifications of specific stars within constellations from Chinese star charts.