

ch 30
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Critical Thinking

STAR SPECTRA

Spectrographic analysis is used by astronomers to determine the composition of stars. The spectrum of a star depends on the star's temperature and composition. No two stars have exactly the same spectrum. The top two spectra shown are star spectra. The other spectra were produced by individual elements:

1. What kind of spectra are the star spectra shown?

2. What kind of spectra are those shown for the elements?

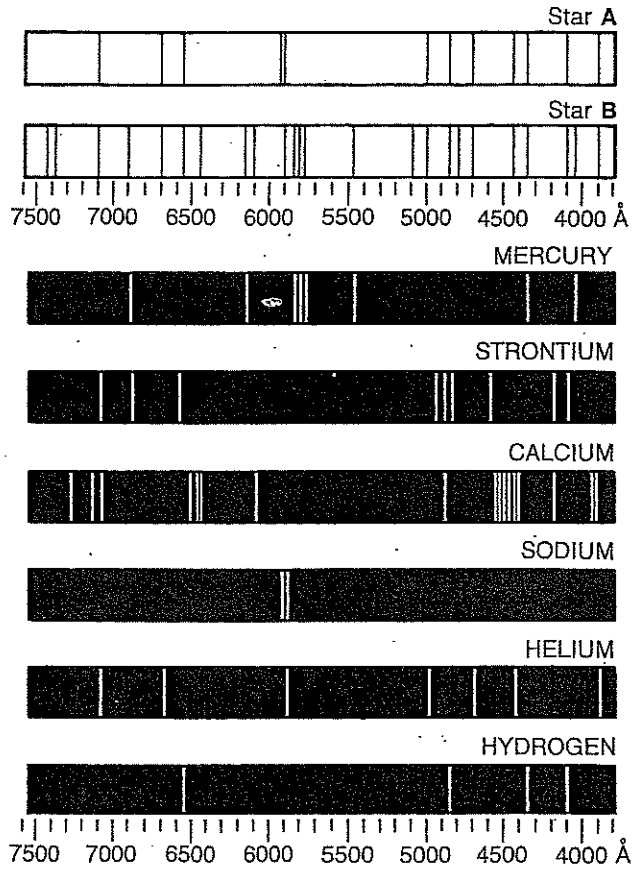
3. Approximately what wavelengths are found on the hydrogen spectrum?

4. Does hydrogen occur in the atmosphere of star A? Of star B?

5. What is the atmospheric composition of star A?

6. What is the atmospheric composition of star B?

7. Which elements do not occur in the atmosphere of either star?

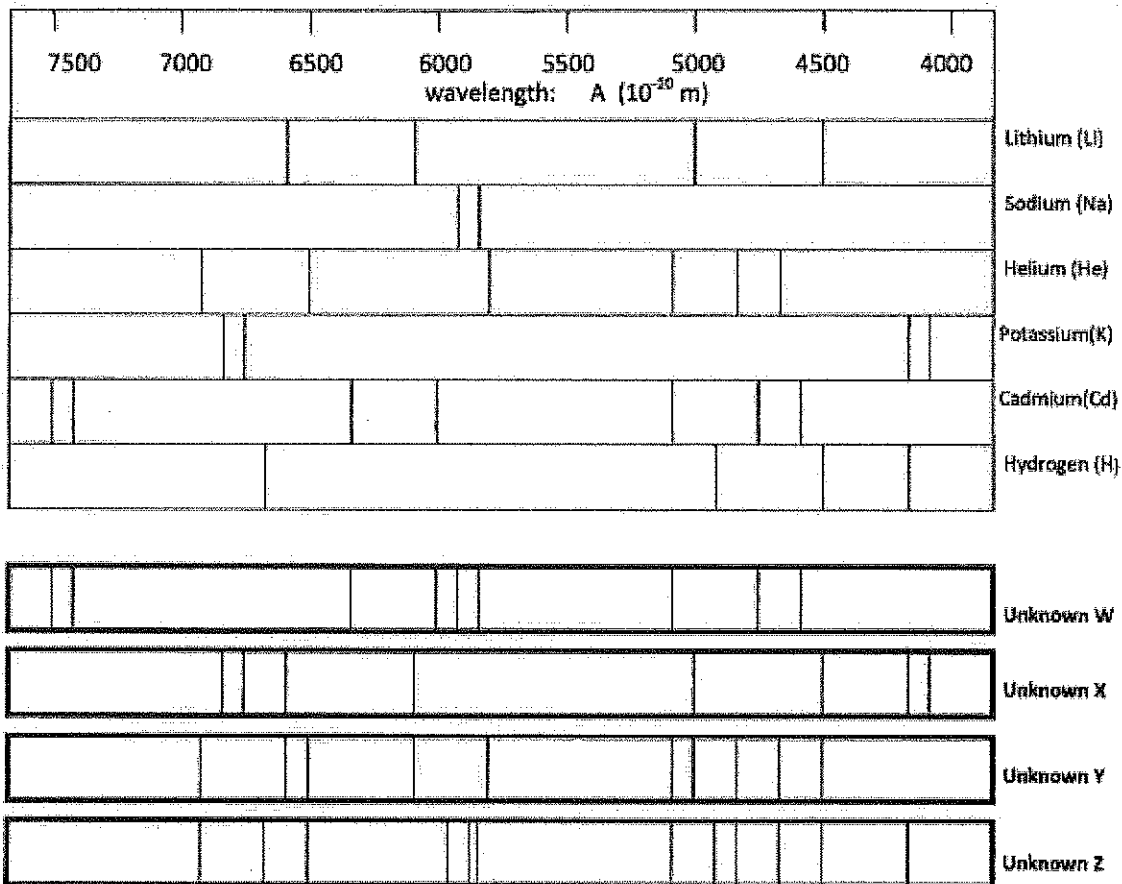


Bright-Line Spectra

Objective: To test your ability to analyze bright-line spectra charts

Below, bright-line spectral chart for five elements and four unknown samples are given.

Answer questions 7-11 based on the information given in the chart.



7. List all elements present in unknown sample W.
8. List all elements present in unknown sample X.
9. List all elements present in unknown sample Y.
10. List all elements present in unknown sample Z.
11. Explain, in terms of electron transition, how bright-line spectra are produced by atoms.