

Challenge—The Most Wanted

Based on what you learned throughout this unit, complete the following challenge:

Challenge Resources

You are now ready to assemble your Most Wanted poster. To accomplish this, use information gleaned from the activities in all three of the Explorations in this unit, and/or other sources you find on your own.

You will find a dossier (crime file) of your selected star in the *LA* Data Center under *Investigating Stars: Challenge* on the *LA* Web site. https://ia.terc.edu/mod_05.html It will contain the following information about your star:

- A “mugshot” or artist’s representation of your object
- A general description: color, temperature, approximate size/diameter, distance from the sun
- Your star’s “fingerprints”—its actual spectrum or best guess
- A series of other papers, diagrams, light curves, and other pertinent information about your star.

Meeting the Challenge

After examining the dossier, use what you learned during this unit to construct a “wanted” poster for your object. Descriptive features of the object on your poster must include:

- Image of the star, or an artist’s representation (sketch)
- General description (color, diameter, temperature, distance from the sun)
- An alternate nickname or “aka” (also known as...). For example, Ucant Seeme would be listed on the poster as Ucant (aka “The Vacuum”) Seeme
- Fingerprints: Analyze your object’s spectrum and describe the elements that make up the object and any other structural features you can glean from it (e.g., hot gas surrounding the object). Point out major absorption or emission lines.
- Life history (from birth to present) with pictures from family album — include picture of star at birth, maturity, old age (if applicable)
- Bizarre behavior (light curves, variability), or other characteristics

The poster will consist of four pages of 8.5 x 11” paper (portrait orientation) arranged in a grid with pages 1 & 2 on the top row and pages 3 & 4 on the bottom row.

- The **first page** of the poster should contain the image of the most-wanted object and the general description. Also, explain why the star is “wanted,” and document any bizarre behavior, characteristics, or danger to Earth if the object were to approach our solar system.
- On the **second page**, analyze the “fingerprints” of your object. If applicable, provide a light curve. Give a general description of the object’s composition based on your analysis of the spectrum.
- On the **third page** of your poster, give the life history of your object in the form of a family album. Include an image or sketch of your star’s constellation (family). Include images of what your object might have looked like at birth, as an adult, and in the later stage of its evolution. Write a caption for each image that describes the phase of life pictured.
- On the **fourth page** of your poster, show an image that depicts what your star might look at the end of its life. Include a caption that describes this end stage of its life.
- You’ll attach your pages to a piece of poster board. Your teacher will tell you where to post your work as part of your class’s “Most Wanted Stars” display.

Checklists for Parts of Your Poster

<p style="text-align: center;">Page 1 <i>Name and Description</i></p> <ul style="list-style-type: none"> ○ Name & nickname ○ Image or sketch ○ Why wanted, danger to Earth ○ Color ○ Diameter ○ Surface Temperature ○ Distance from Sun 	<p style="text-align: center;">Page 2 <i>Fingerprints</i></p> <ul style="list-style-type: none"> ○ Spectrum (Fingerprint) ○ Composition based on fingerprint analysis (a sentence or two) ○ Light curve (if available) ○ Alternate views
<p style="text-align: center;">Page 3 <i>Family Album and History</i></p> <ul style="list-style-type: none"> ○ Image or sketch of family (constellation) ○ Star's history—images of each stage of the star's life and major changes in its life from birth to its current phase of life. ○ Caption under each image that describe the phase of life pictured. 	<p style="text-align: center;">Page 4 <i>Star's future</i></p> <ul style="list-style-type: none"> ○ Images/diagrams that show how the star will evolve into the future and how it will end its life. ○ Caption under each image that describes the phases depicted (so that crime fighters can identify it in the future).

Investigating the Stars

Name: _____ Block: _____

02 Ike S.N. Wannabee

03 Wayfar Extrasolar

04 I.M. Littlewhite

05 Biggen Scarlet

08 Yello Solartwin

09 Ucant Seeme

10 Soeyem Notsohot