H–R DIAGRAM II
WORKSHEET

Name	
School, class	
Date	

1   Advanced Search of HIPPARCOS Catalogue of Stars

Explore the Advanced search of the HIPPARCOS Catalogue of Stars available on the webpage Astronomia (astronomia.zcu.cz → Catalogues...in education → Online Applications → Stars → Advanced Search of the HIPPARCOS Catalogues). *Note: Consider mainly the apparent magnitude (Vmag) and parallax (Plx) that are important to construct Hertzsprung–Russell (H–R) diagram.*

find and write answer

What is the range of apparent magnitudes (Vmag) of stars stored in the HIPPARCOS Catalogue of Stars?

2   Constellations and List of Stars

Choose one constellation (possible to use the auto-complete function) and view a list of stars from the catalogue sorted by magnitude from brightest to dimmest.

find and write answer

Which constellation did you choose? What is the designation and name of the two brightest stars of your chosen constellation? What are their apparent magnitudes?

3   Three Stars, Stars Location on H–R Diagram and Stars Type

Select three stars from the above list of stars. Using the web application on Astronomia pages find the location of selected stars on H–R diagram and determine their type. Decide whether the star is brighter than the Sun or not.

find and write answer

Which stars did you choose? What is the type of selected stars? Decide whether selected stars are brighter than the Sun or not. Fill in the table below.

Designation (name) of star	Type of star	Absolute magnitude
HIP		
HIP		
HIP		

4   A Comparison of H–R Diagrams

Display an H–R diagram for stars within 100 pc (nearby stars).

Display an H–R diagram for stars from 100 pc to 400 pc (distant stars).

Describe each area of both H–R diagrams.
Are there differences between the H–R diagrams of nearby and distant stars?
Why? Explain the reason(s).

find and write answer

Note: Compare each area of both H–R diagrams; find which area is missing or which one is more expressive. Also, consider the values on the vertical axis.

Conclusion

Describe: how did you solve this task, mention problematic areas, all difficulties of this task. Do you have any suggestions on how to improve it?

give your opinion