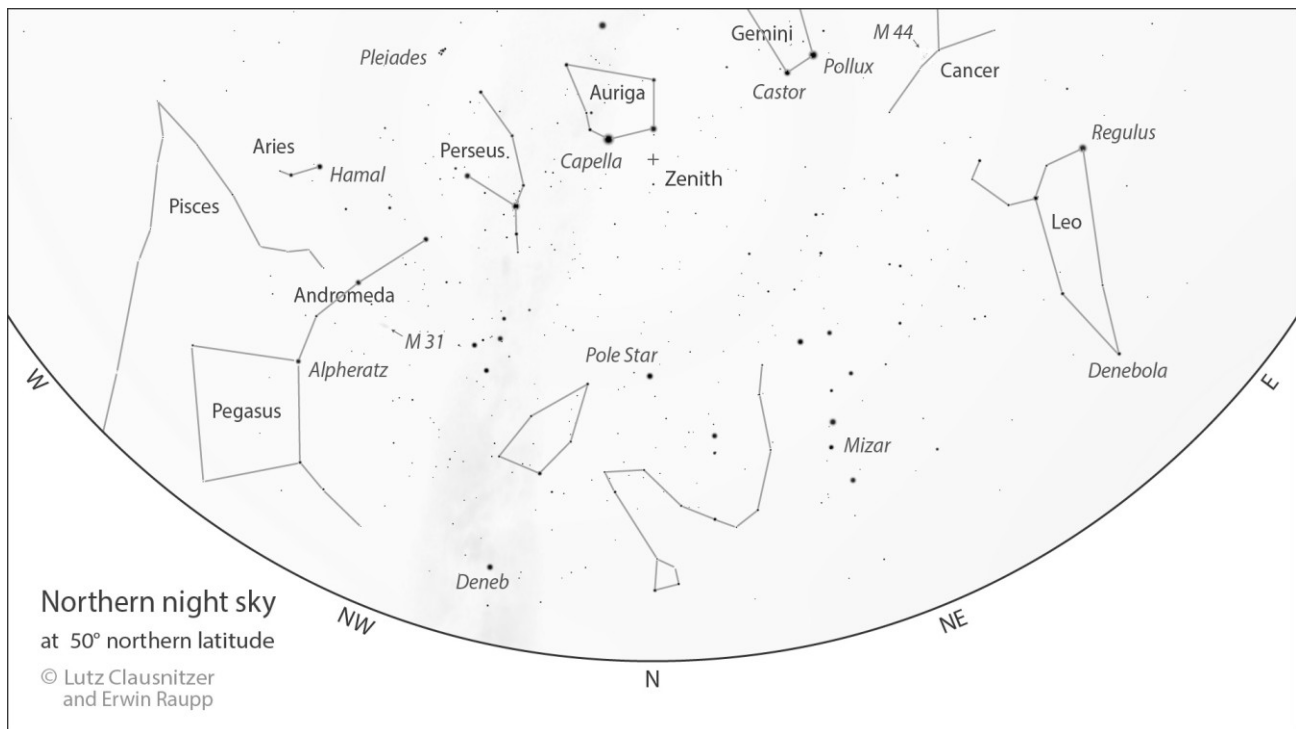


# Problems to App “Audio Sky Tours”, Episode 1

## With the Big Dipper around the Celestial Pole



1. Draw the Big Dipper, the Little Dipper and the celestial W into the chart using a pencil. But name them by the official constellation names, represented by these asterisms.
2. Draw the lines to find the North direction with good approximation, and use the Big Dipper to do this. Name the star being important to do this.
3. Two additional constellations discussed in episode 1 are not denominated in the chart. Add the constellation names.
4. In London the pole star is seen at  $52^\circ$  above the northern horizon, in Gibraltar only  $36^\circ$ . What does this mean to these cities geographical coordinates?
5. How many hours will the Big Dipper need to travel to a position deep over the northern horizon, starting from the point drawn in the chart?
6. Why do we observe one more rotation of the sky compared to the number of days in the year? How did this already help ancient cultural people to better organize their lives?
7. Most stars observed in the sky rise and set. Which condition do stars meet never setting at a given northern latitude? Which stars never rise at this latitude?
8. What are stars in contrast to planets? Why do we also see planets shining – sometimes even brighter than stars – though they don't produce light.
9. What is the special with Mizar?
10. We can see more than thousand stars with good seeing conditions. Can you name at least two reasons, if you see only 10?