Learn to tell time using Circumpolar stars

**Purpose:**
Use the attached device to determine the time on a couple nights. See how this time compares to the real time.

**Equipment and Time Needed:**
The star clock pattern attached
Some kind of spindle
A flashlight (with red filter would be best)
A watch

**Procedure:**
1) Cut out both circles on the last page of this project. Place the dark circle on top of the light colored one. Attach them together through their centers with the spindle. The dark circle should be able to rotate freely.
2) Go outside at night and look to the north.
3) Put the current month to the top while looking north.
4) Now move the pattern of Cassiopeia, the Big Dipper and the Little Dipper until they match the pattern you see in the sky. Read off the time on the star clock (estimate between hour marks as best as you can.) Remember to add an hour during DST.
5) Note the actual current time on your watch.
6) Repeat this process on two more nights at least one week apart.

**Data:**
Date on Night #1: _______________
   Time from Star Clock: _______________
   Time from watch: _______________

Date on Night #2: _______________
   Time from Star Clock: _______________
   Time from watch: _______________

Date on Night #3: _______________
   Time from Star Clock: _______________
   Time from watch: _______________

**Questions:**
1. How close did you come on each of the nights?
2. Why might there have been a difference (some can be over an hour different.)
3. Can you think of a way to get better results?