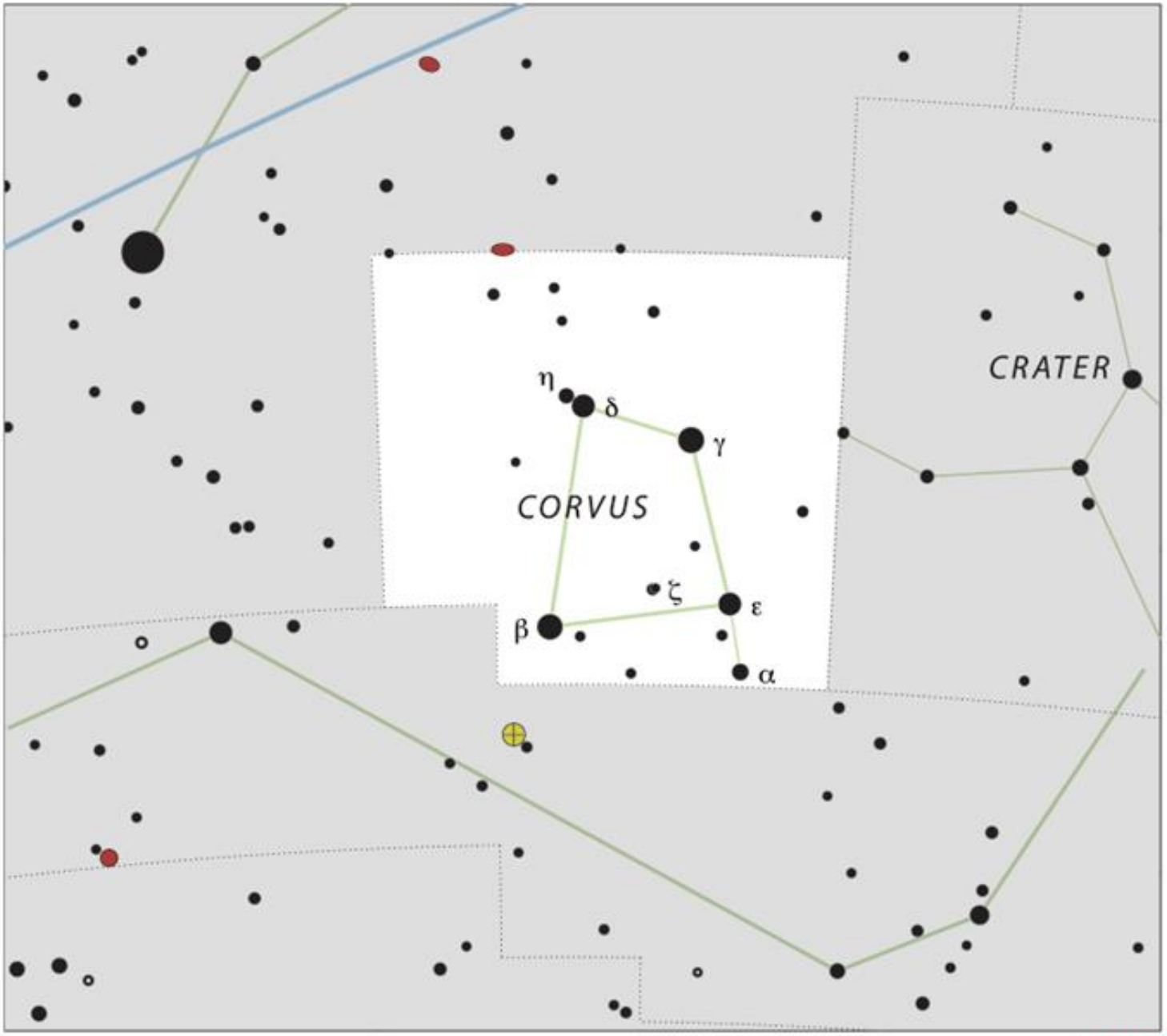
# JURY - OBSERVATION TEST



**Question 1 - 18 points**

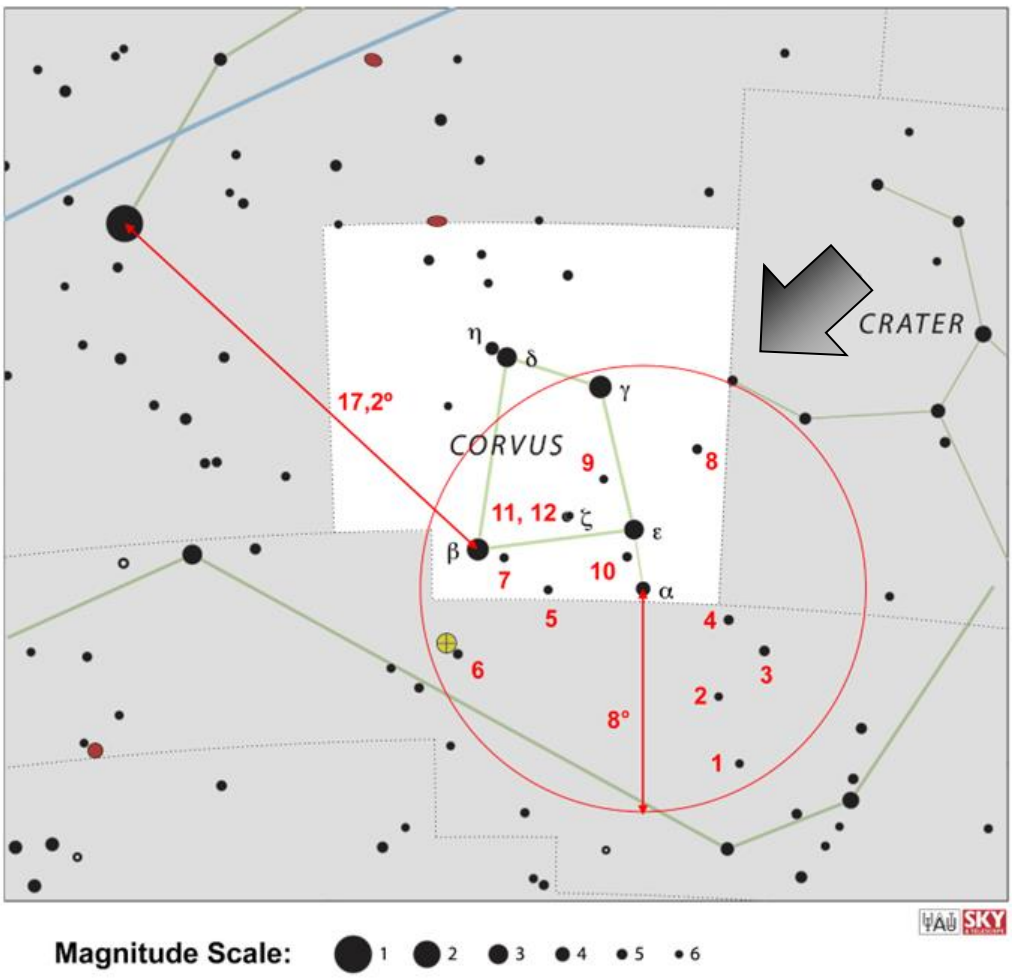
Consider that the angular distance between the stars Kraz (Beta Corvi) and Spica (Alpha Vir) is 17.2º.

Using the Star Chart, draw the circumference and count which stars between magnitudes 4 and 6 exist within a radius of 8º from Alpha Corvi.




**Magnitude Scale:** 1 2 3 4 5 6

- +1.5 points per star inside the circumference (numbered on the figure).
- - 1.5 points if other stars are marked, except for the star marked with an arrow
- 12 stars, total: 18 points.



2) Total: 16 points

2.1) 4 points (1 point for each Cardinal Point)

On the Star Chart, identify and mark the Cardinal Points N, E, S and W.

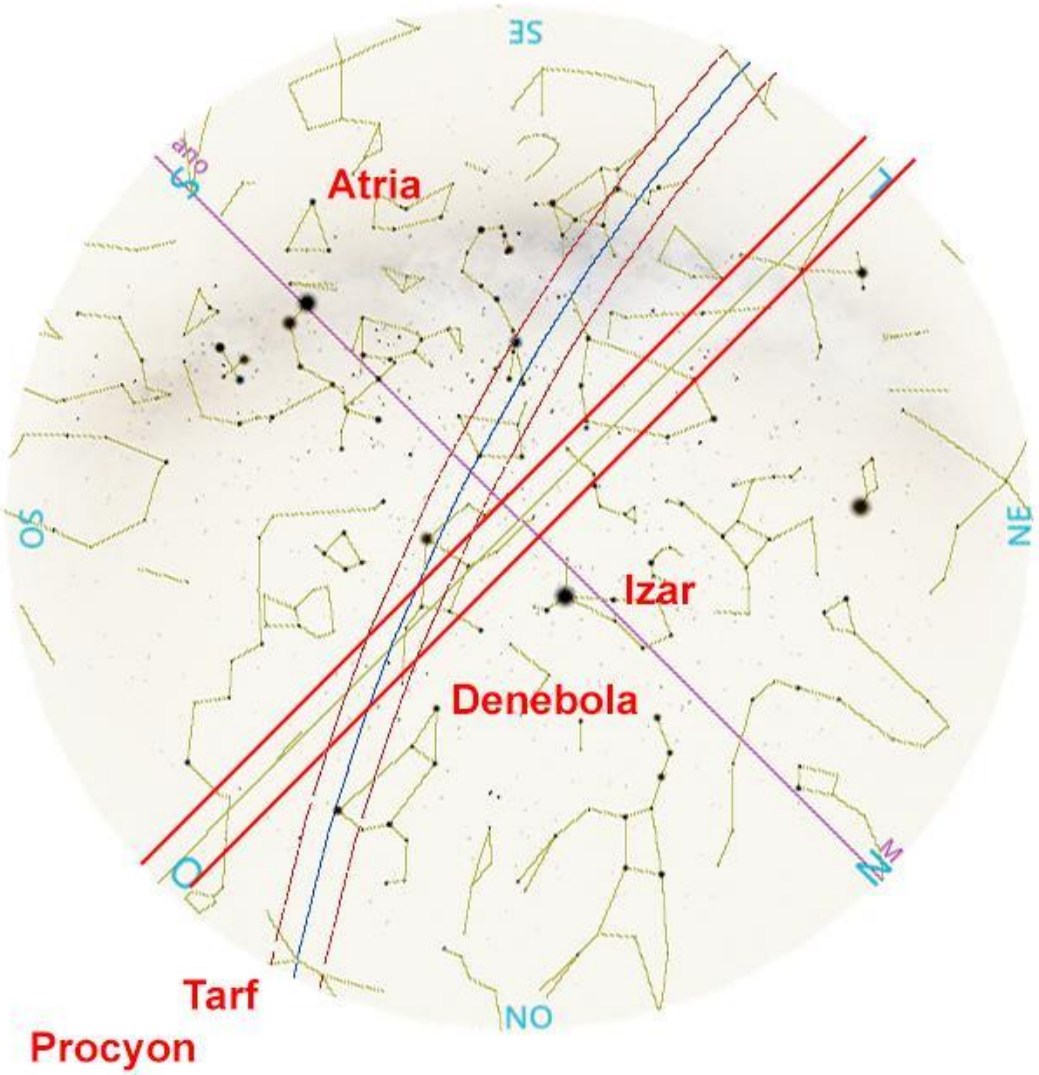
2.2) 6 points (2 points for each line)

Next, draw the Celestial Equator, the Local Meridian and the Ecliptic.

2.3) 6 points (2 points for each star and -2 point for each star outside the chart)

Present on the Celeste Chart are the stars Denebola, Izar and Atria.

| Procyon<br>α CMi | ( ) | Denebola<br>β Leo | (X) | Izar<br>ε Boo | (X) | Atria<br>α TrA | (X) | Tarf<br>β Cancri | ( ) |
|---|---|---|---|---|---|---|---|---|---|


SE
Atria
Izar
Denebola
Tarf
Procyon
NO
NE

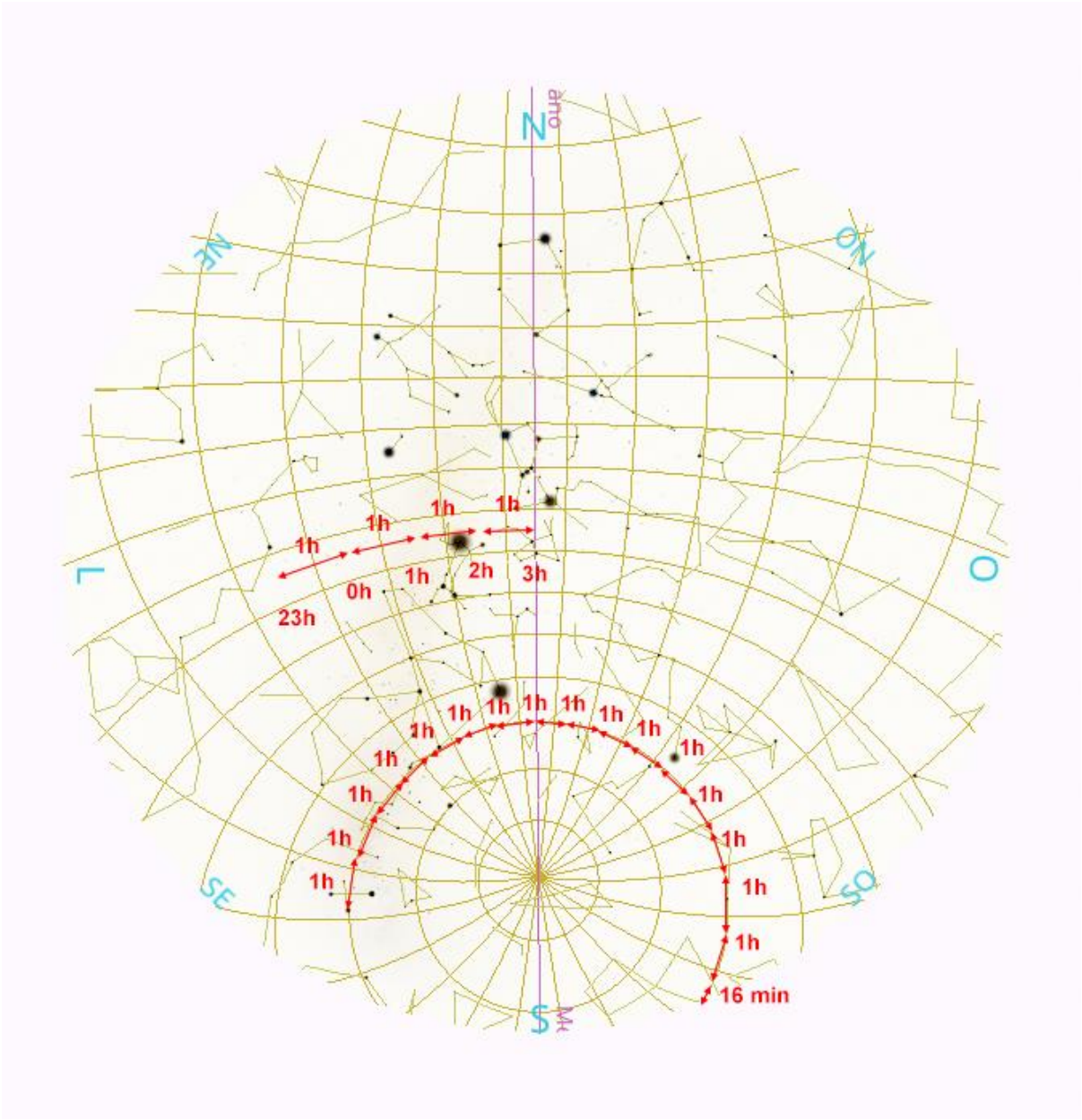
3) Total: 11 points

3.1) Total 7 points

- 4 points for identifying Alpha Hydrae (α Hya)
- 3 points if the student answers 3 am +/- 10 min
- 2 points if the student answers 3 am +/- 20 min
- 1 point if the student answers 3 am +/- 30 min

3.2) total 4 points

- 3:00 pm - 3:30 pm (4 points)
- 3:00 pm - 4:00 pm (3 points)
- 3:00 pm - 4:30 pm (2 points)
- 2:30 pm - 4:30 pm (1 points)




## Telescope Test

Part 1:

- The students were distributed in 6 groups, the first 5 with 40 students, the last with 32.
- The distribution in groups was made aiming to minimize the number of students of the same country in each group. When that was not possible, the students of the same country were assigned to tables as far apart as possible.
- The students were assigned to tables numbered from 1 to 40, each with a telescope initially out of focus and pointing to Az=0º and h=0º.
- Due to parallax, the coordinates of the target were different for each table. The table assigned to each student is given in Table 1.
-

Total: 15 points (7.5 to each coordinate)

- within 1.5º of the reference value: 7.5
- within 2.0º of the reference value: 6.0
- larger errors: no points

Part 2:

The answer is:
Right Ascension: 01h 58m 45.87s (29,69113°)
Declination: −61° 34′ 11.7″ (-61,56991°)
Constellation: Hydrus
Name of the star: Alpha Hydri

Total: 15 points, distributed as follows

- convert Altitude into Zenith distance (1 point)
- calculate Right Ascension:
    - 01h 58m - 01h 59m (3 points)
    - 01h 57m - 02h 00m (2 points)

- calculate Hour Angle (2 points)
- calculate Declination
    - Between -62° - -61° (3 points)

- identify the star on the star chart (2 points)
- identify the name of the star (2 points)
- identify the constellation (2 points)