Below are questions of the Observational Round. This round was held at night on 22 October 2019 in the freezing cold in Stadium Ceahlaul (football stadium of Piatra Neamt, Romania).

OBSERVATIONAL ROUND

ANSWER ALL SIX QUESTIONS

(25 MINUTES)

АСТРОНОМИЧЕСКОЕ
ОБЩЕСТВО

EURO–ASIAN
ASTRONOMICAL SOCIETY

**Round** **Obs**

**Group** α β

XXIV Международная астрономическая олимпиада

XXIV International Astronomy Olympiad

Румыния, Пьятра-Нямц      19-27. X. 2019      Piatra Neamt, Romania

язык
language **English**

## Observational round. Questions
## Clear sky

Code of participant      код участника

## 8-10. Naked eye observations.

8.  Write the angular distance between Capella and Deneb
    (α Aur  and  α Cyg).

9.  Write the name of the three stars that fulfill both the following conditions:

\# Each of the three stars is apparently brighter than $1.5^m$.

\# Each of the three stars passes every day at less than 10 degrees of the zenith in Piatra Neamt.

The stars' order is not important. The name should be expressed with the Greek letter followed by the standard three-letter Latin designation of the constellation (like α UMa).

| Star A | Star B | Star C |
|--------|--------|--------|
|        |        |        |

10. Which is the constellation traversed by the ecliptic and the Alpha star of which had the northernmost declination in the year 11000 BC?
    Please answer in writing using the Latin name of the constellation or its standard three-letter Latin designation (like UMi).

## 11-13. Telescope observations. Using the provided telescope:

11. Find Messier 31 and bring it into the field of the eyepiece. Show the result to the assistant.

12. Within 1° of M31 you can find two additional Messier objects. Write the Messier number of each and the direction (in English: N, NE, E, SE, S, SW, W, NW) towards which each can be found relative to the central bulge of M31.

| Object A | | Object B | |
|----------|--------------------------|----------------|--------------------------|
| Messier number | Position relative to M31 | Messier number | Position relative to M31 |
|          |                          |                |                          |

13. Using the attached maps, find the planet Neptune and center it in the eyepiece. Show the object to the telescope assistant.

*The total time for all tasks is  **25 minutes**.*

Map for question 13.

Карта для задачи 13.

ψ1 Aqr

λ Aqr

ψ

ψ1 Aqr

λ Aqr

Δα = 0h5m

Δδ=1°