



XXVII Международная астрономическая олимпиада
XXVII International Astronomy Olympiad

Китай, Пекин

6 – 14.XI. 2023

Beijing, China

ЯЗЫК
language

English

Observational round. Outdoor

Instructions:

1. This part of the observational round consists of 2 questions (#9 and #10).
2. Your task is to observe several glowing screens (smartphones, tablets, LED panels, etc.) at a far distance.
3. You have 6 minutes to work on #9, and 10 minutes on #10. You will hear signals for: #9 beginning, #9 ending, #10 beginning and #10 ending.
4. Please do not touch the telescope before the beginning signals and after the ending signals. Please hand over your first answer sheet to telescope assistant instantly after #9 ends.
5. Please use the telescope safely and correctly. Telescope assistant might stop your dangerous action. Any kind of misoperation, including disobedience on the rules or incorrect operation on telescope, might cause a negative effect on your score.

9. Sky objects.

Five screens are already lit up. On the two left and two right screens there is one three-letter abbreviation of the constellation name, one image of the constellation, one deep-sky image and one image of the object of the Solar System, respectively.

Write down the names of these objects in the order of the screens (from left to right). For the three-letter abbreviation of the constellation name, simply repeat these three letters – this is a test of how well you have focused the telescope.

Please hand over your first answer sheet to telescope assistant now.

10. New star.

The middle screen shows an image of the same deep-sky object that you observed in #9, but on a different night. Also, a new star appeared on the screen.

Draw this deep-sky object in the circle on the answer sheet, assuming that the circle is the field of view of your telescope. Mark the new star with the symbol 'X'.



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Observational round. Sky map

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8. Sky map.

The figure shows the sky observed at some position on another planet on November 1st 2083 (Earth time), assuming that there is no atmosphere. On this date, this planet is in the constellation of Capricorn when observed from the Earth. There are some dim curves on the sky, which are the planet rings. The bright star at bottom right is the Sun. The North Pole on the sky of this planet is marked as a cross NP.

8.1. What planet is this?

8.2. List six constellations (not more than six) which satisfy both the two conditions:

- the celestial equator of THIS planet passes through;
- the constellation should be above the horizon in the sky map.

8.3. Mark THREE satellites of this planet by circles on the map.

8.4. Mark the Earth on the map by symbol $\oplus$.

8.5. Mark the position of the Sun on Nov. 1st, 2088 on the map, by symbol $\odot$.

Note:

The official IAU names (in Latin), abbreviations and symbols will be accepted. Spelling mistakes will be tolerated. Not native names.

Points will be deducted for wrong answer, but no negative point will be applied.



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Observational round. Map 8.

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