



Code of participant      код участника

## Round on Maps and Images. Images for problem 11



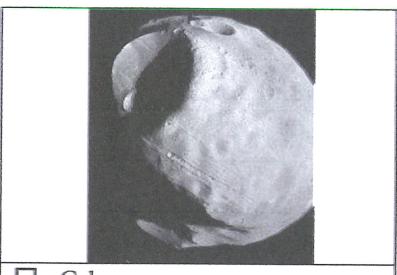
- Hyperion
- Comet P/1
- Mimas
- Enceladus



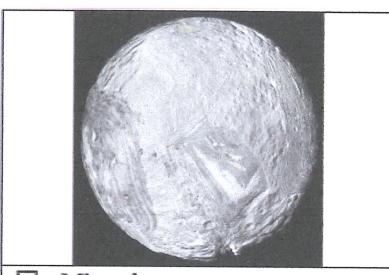
- Halley comet
- Comet P/47
- Comet P/67
- Hale-Bopp comet



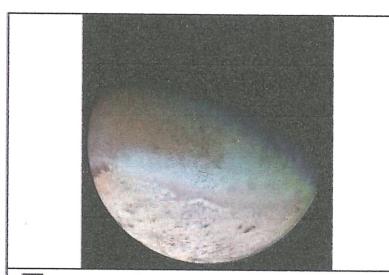
- Moon (far side)
- Ganymede
- Mercury
- Callisto



- Calypso
- Deimos
- Phobos
- Amalthea



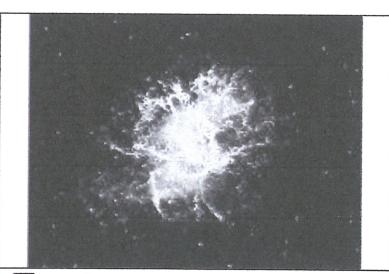
- Miranda
- Ariel
- Umbriel
- Titania



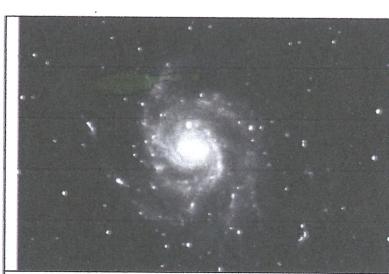
- Nereid
- Mimas
- Triton
- Pluto



- M1
- M31
- M45
- M101



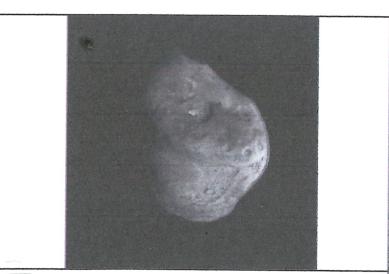
- M1
- M31
- M45
- M101



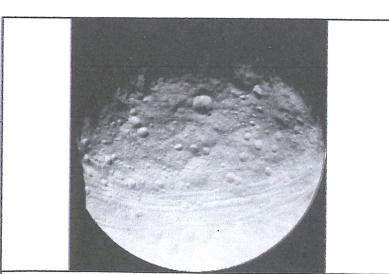
- M1
- M45
- M31
- M101



- M1
- M31
- M45
- M101



- Comet Tempel 1
- Comet P/67
- Comet Tempel 2
- Comet P/47



- Orcus
- Vesta
- Charon
- Pluto

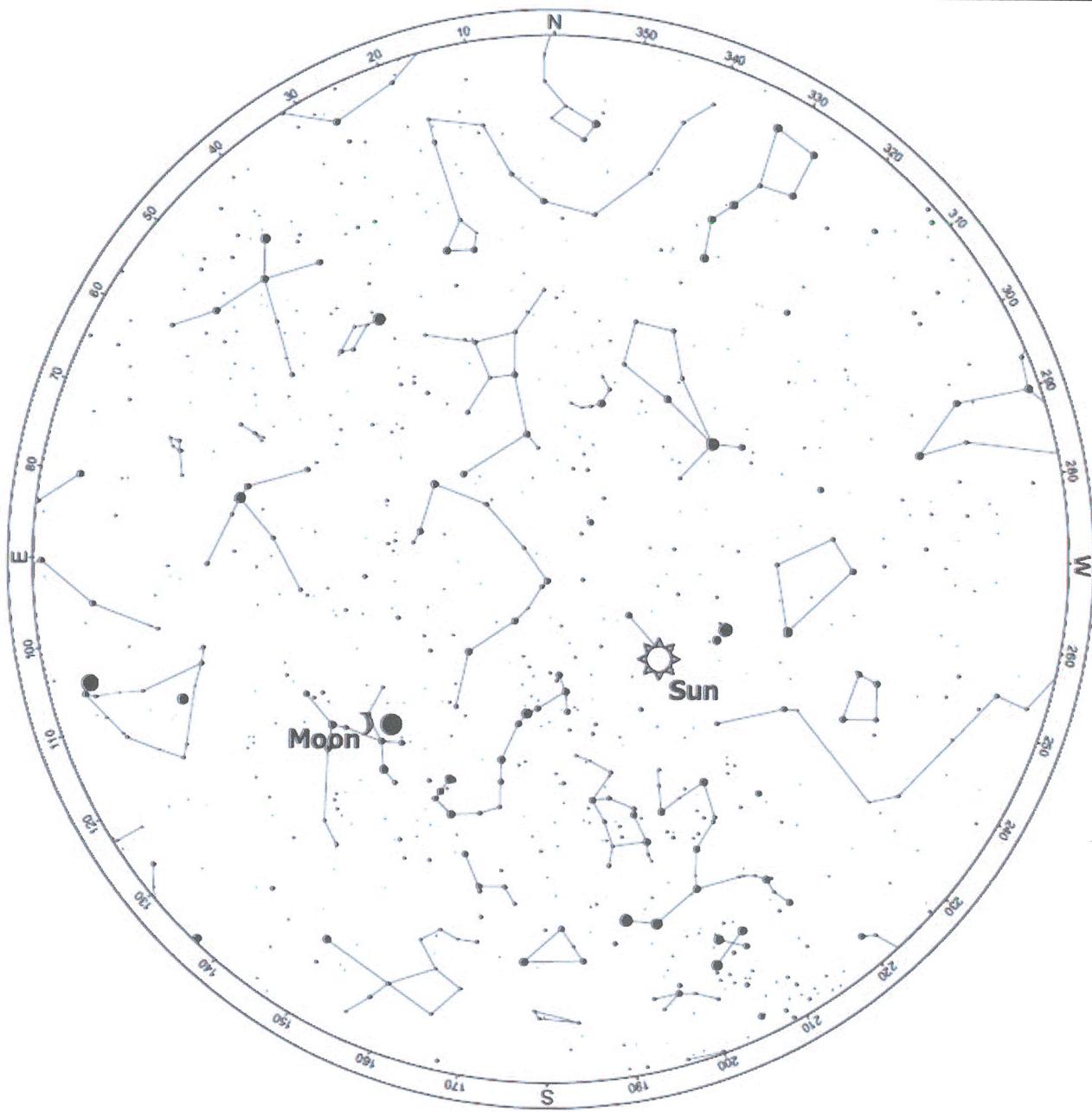


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## Round on Maps and Images. Map for problem 10

$\Phi =$





Международная дистанционная астрономическая олимпиада  
International Remote Astronomy Olympiad

Италия, Милан

5-13. XI. 2021

Milan, Italy

Round

M & I

Group

$\alpha$   $\beta$   $\gamma$

язык  
language

English

## Round on Maps and Images. Questions to answer

### 10. Where is my planet?

The attached map shows the sky as it could be observed at 13:00 UT of November 8, 2021, if no atmosphere was present, from a locality on the Earth located at longitude  $\lambda = 0^\circ$  and latitude  $\varphi$ . The positions of the Sun and of the Moon (as a small sickle) are shown. In the map planets Jupiter, Mars, Mercury, Saturn and Venus are also visible, represented with dots whose dimension is proportional to their current luminosity.

- 10.1. Estimate the latitude  $\varphi$  of the place where observation could be made and write it in degrees inside the box on right top of the map.
- 10.2. Draw on the map as a dotted line the ecliptic and identify with "Ecl".
- 10.3. Draw on the map as a continuous line the celestial equator and identify with "Eq".
- 10.4. Identify on the map the planets and indicate them with their standard designation (like  $\oplus$ ,  $\ominus$ ,  $\oplus\ominus$ ,  $\sigma$ ,  $\omega$ ,  $\hbar$ ,  $\Psi$ ,  $\Psi$ ).
- 10.5. Identify on the map the following 14 constellation, writing their three letter code nearby:  
**Aql, Boo, Cen, Cru, Crv, Del, Her, Leo, Lib, Lyr, Oph, Sgr, TrA, Vir.**
- 10.6. Identify on the map the following 5 stars, writing the indicated three digit code nearby:  
**Acrux (Acr), Albireo (Alb), Antares (Ant), Denebola (Den), Mizar (Miz).**

### 11. Who is who?

You are provided with a sheet where images of 12 astronomical objects are shown. Identify these objects marking the correct answer among the listed four. Multiple choose or corrections are not allowed.