Observing competition – planetarium round

Solutions and points

Note: For questions requiring giving a position, correct to 1° gets full marks (usually **1 point**), correct to 2° gets half marks (usually **0.5 point**).

1. Earth Max 25 points

A) On the map of the sky, mark and label the nova and the Moon and draw the shape and position of the comet. **[2+1+3]**

B) In the table below, circle only those objects which are above the astronomical horizon. **[+0.5 for each correct, -1 for each incorrect]**

~~M20 – Triffid Nebula~~	o Cet – Mira	δ CMa – Wezen
α Cyg – Deneb	~~M57 – Ring Nebula~~	β Per – Algol
δ Cep – Alrediph	~~α Boo – Arcturus~~	M44 – Praesepe (Beehive Cluster)

C) When the coordinate grid is visible, mark on the map the northern part of the local meridian and the ecliptic north pole. **[3+2]**

D) For the displayed sky, give the :

geographical latitude of the observer : $\varphi = 50° \pm 1°$ **[1]**

Local Sidereal Time : $\theta = 5^h 25^m \pm 8^m$ **[2]**

time of year, by circling the calendar month :

Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec. **[2]**

E) Give the names of the objects, whose approximate horizontal coordinates are :

azimuth $A_1 = 45°$ and altitude $h_1 = 58°$: . . . **M 45** . . . . . , **[1]**

azimuth $A_2 = 278°$ and altitude $h_2 = 20°$: . . . **α Leo** . . . . . **[1]**

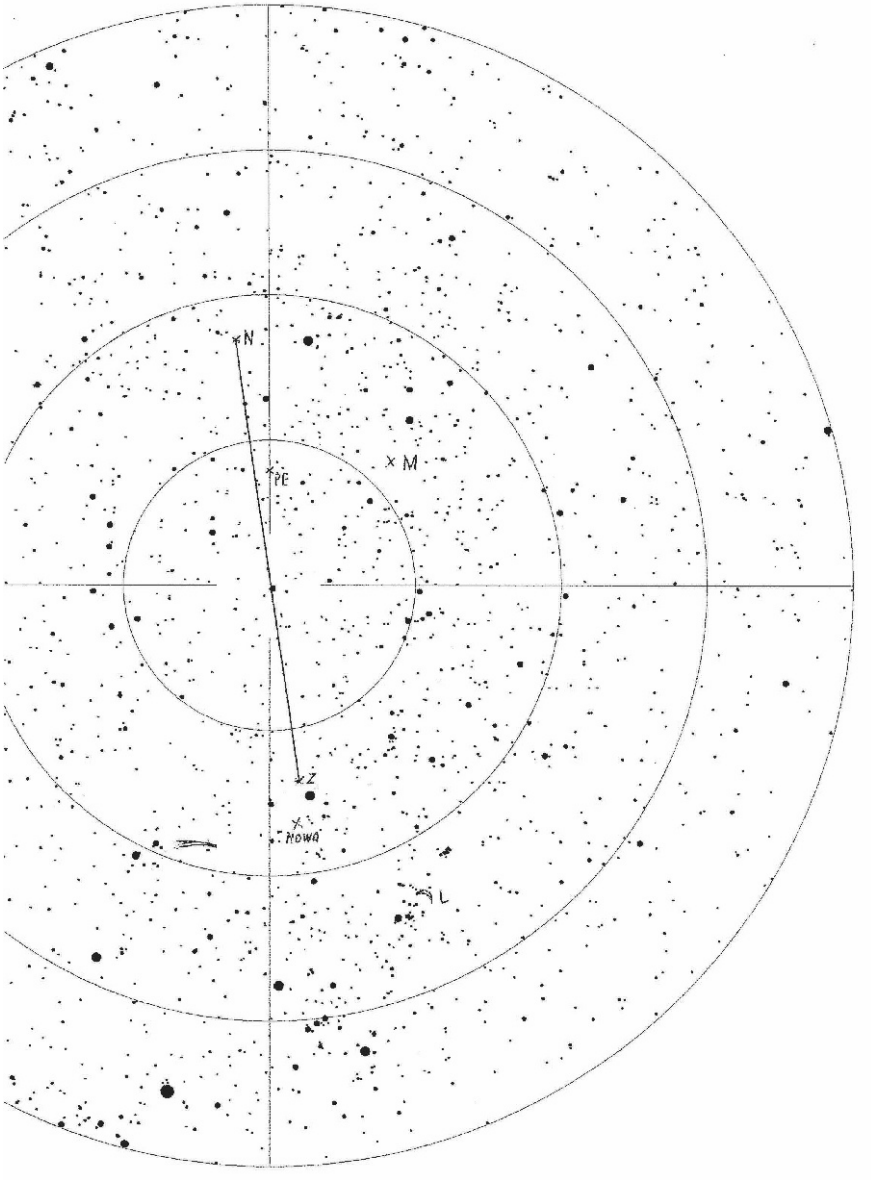
F) Give the horizontal coordinates (azimuth, altitude) of :

Sirius (α CMa) : $A_3 = 340° \pm 2°$; $h_3 = 20° \pm 1°$ **[0.5+0.5]**

The Andromeda Galaxy (M 31) : $A_4 = 108° \pm 2°$; $h_4 = 41° \pm 2°$ **[0.5+0.5]**

G) Give the equatorial coordinates of the star marked on the sky with a red arrow :

$\alpha = 3^h 24^m \pm 15^m$; $\delta = 49° \pm 3°$ **[1+1]**


N
M
PE
Z
Nowa
L