

figure 3

Now we need to find the value $|\eta' - \eta|_{\max}$. According to symmetry, it's enough to consider the situation that $\theta \sim [0, 1/2\pi]$.

On the vernal equinox day of Saturn: $\theta = 0^\circ, \eta = 0^\circ, \eta' = 2.7^\circ, |\eta' - \eta| = 2.7^\circ$;

On the summer solstice day of Saturn: $\theta = 90^\circ, \eta = \alpha = 26.7^\circ, \eta' = 26.56^\circ, |\eta' - \eta| = 0.14^\circ$. It can be deduced that $(\eta' - \eta)$ decreases monotonously from vernal equinox to around summer solstice. Thus $|\eta' - \eta|_{\max} = 2.7^\circ$, and it happens when Saturn is on vernal equinox and the angular distance between Earth and the Sun seen on Saturn reaches maximum.

group β ~ 3 p

2009 IAO, Observational Round, Sketches for Solution

Group α & β

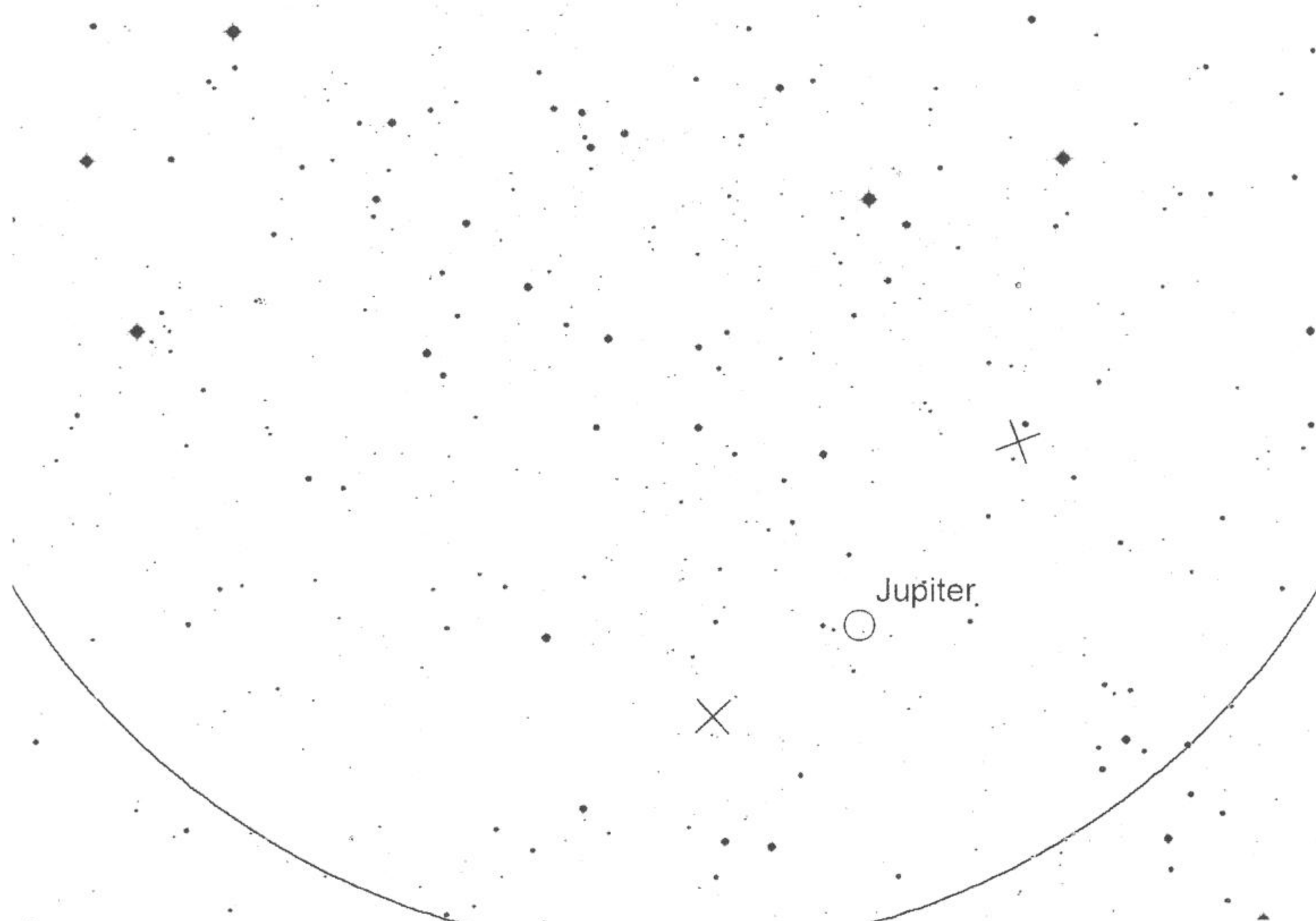
8.

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XIV International Astronomy Olympiad

Китай, Ханчжоу

8 - 16. XI. 2009

Hangzhou, China

8.3 C D

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