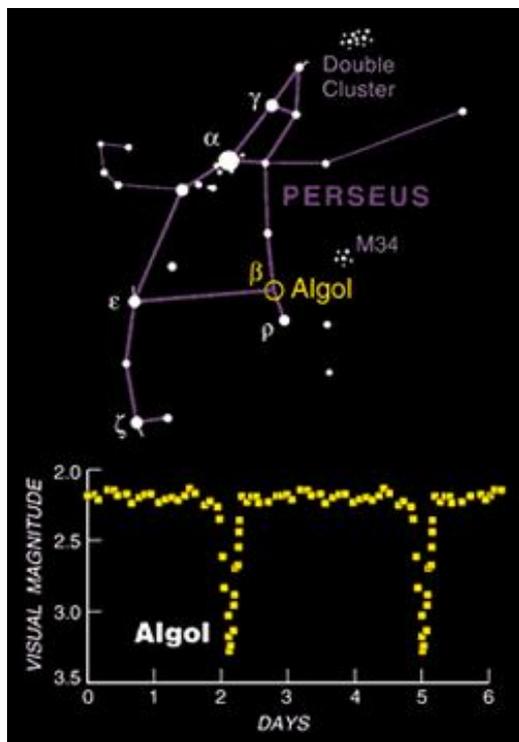


Algol: my favorite naked-eye object in the nocturnal sky

G.P. Können, *Terschelling Diary* 2008/1



Algol is the famous ‘blinking star’: it is once every three days weaker than normal. If one is used at Algol’s normal appearance, it is quite impressive to see it in its minimum. Its brightness is then comparable to that of the little star just next to him (ρ Per). Its peculiarity stems from the fact that Algol is a binary system that undergoes mutual occultations. If the largest component occults the weaker one, the total brightness decreases by a factor 3, from magnitude 2.1 to 3.4. Visually the process takes 8 hours: first the brightness continuously decreases for 3 hours; then it stays for 2 hours on its lowest value; finally the brightness increases in 3 hours back to normal.

In the course of a month the observable minima occur in clusters. Algol’s period is 3 days minus 3.2 hour, thus consecutive minima happen at earlier times of the day: when a certain minimum occur at midnight, the next one occurs three days later on 21 o’clock, and another one three more days later on 18 o’clock. After that, the minima

occur at daytime and are not observable. But after about $8 \times 3 = 24$ days the minima shifted back by a full day, so after 23 days it occurs at midnight again. Hence, once every three weeks we get the opportunity to see Algol a few time in its minimum. If we restrict our available observation time to the period between sunset and midnight (that probably makes sense), then a series consists of 3 consecutive cases at most, all of them separated by three days. During the short summer nights the series are usually shorter – mostly consisting of just one case.

Not only is it worthwhile to observe Algol during its minimum brightness, but it is also neat to follow its brightness increase from minimum to normal. This process takes about 4 hours. In the winter season such an observation is easily doable – extra equipment is not needed. To me, this type of observation makes Algol one of the nicest objects in the sky. Every evening when I walk outside, I briefly check whether I can catch him on its minimum. Simple naked-eye astronomy, but most appealing indeed!

The next maximum can be found from

<http://www.skyandtelescope.com/observing/objects/variablestars/3304096.html> .

Set your alarm when it happens tonight!