

## The Night and Day reaction - a note of caution

We want to share a concern we have about the so-called Night and Day reaction. Within SSERC we have used this reaction for many years without incident; indeed we have routinely shared details of the reaction mixture with participants on a number of our courses. Looking through the literature we have been unable to find an original source although the recipe for this demonstration was originally provided to us by Dr Chris Mortimer at the University of Central Lancashire.



*Figure 1 - Earthrise from Apollo 8 (image by NASA).*

The name given to the reaction refers to the oscillating nature of the mixture once ignited. At intervals, a bright flame is produced during which period ignition of the Al powder is clearly visible. After a few seconds a small pale yellow flame is visible. The bright/pale cycle is repeated on a number of occasions. As such the reaction can be used to support the chemistry curriculum at a number of places.

We have, over the years, demonstrated this reaction without incident on several hundred occasions. However, in trying out the reaction recently rather than

an oscillating reaction being established the reaction mixture, when ignited, underwent complete combustion within a very short period of time (considerably less than 1 second). The bright flash of light emitted and very rapid rate of the reaction lead us to conclude that we should no longer use this reaction mixture.

Please alert any of your colleagues who may have used this reaction to this cautionary note. We will, in due course publish details of the recipe for the reaction mixture once we have established how this change in reaction properties can be explained. ◀