

Cometary Outbursts. To pressure or not to pressure.

Several possible scenarios have been proposed as possible explanations for the cometary outbursts observed on 67P. Most of these scenarios are based on either the build up of subsurface pressure (the pressure cooker) or the exhumation of fresh highly volatile rich material which is then activated by the solar insolation. The pressure cooker scenario is problematic because of the highly porous nature of the cometary material and outburst driven by freshly volatile ices require a high concentration of very volatile species.

This talk will discuss an outburst mechanism that will work even without direct solar insolation. The proposed mechanism is based on gas flow in porous media and expanding cracks/cliff collapses. The proposed mechanism can also explain the night time outbursts that have been observed on 67P.