

# MPAGS Astrophysical Techniques

## X-ray astronomy

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*Please email your answers to Peter (p.j.wheatley at warwick.ac.uk) including “MPAGS” in the subject line. Submissions can be scans of hand-written answers. There is no mark associated with the assignment, as the aim is that you engage with the topic. We will just keep note of whether you attempted these questions.*

1. Look up the ROSAT all-sky survey count rate of the cataclysmic variable star SU UMa.
2. Assuming optically-thin thermal plasma emission with  $kT=6$  keV and interstellar absorption of  $N_H=10^{20}$  cm<sup>-2</sup>, estimate the 2-10 keV energy flux of SU Uma.
3. Further calculate the XMM-Newton RGS count rate, and determine how long an observation is required to accumulate 20,000 RGS counts.
4. Find out when such an observation could be made next year.