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Ptolemy Operations in Anticipation of the Flyby of Asteroid 21 Lutetia

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Ptolemy is a miniature chemical laboratory on board the Philae lander segment of the ESA Planetary Cornerstone mission 'Rosetta'. It consists of a three-channel gas chromatograph and an ion trap mass spectrometer capable of determining the chemical and isotopic composition of solid samples recovered via the Sampler Drill and Distribution System, of volatiles trapped onto a molecular sieve for evolution by heating and of the background gaseous environment surrounding the spacecraft. Ptolemy is about to embark on a six day asteroid observation campaign attempting to accomplish the first in-situ detection of an asteroid exosphere. The results from in-flight testing in preparation for this campaign and also the planned operations during the close flyby of asteroid 21 Lutetia and their rationale are described.