Summary sheet

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Traineeship subject	**Objectives**
Simulations of thermal camera images from a spacecraft around astroid (NASA/NAIF SPICE, shape models, thermal model, camera) for the HERA mission.	- To develop a thermophysical model for the secondary in the Didymos system - Carry out preliminary study for HERA cameras
Main client	**Tools required**
- Royal Observatory of Belgium - ESA	- MATLAB - NASA/NAIF SPICE - Cosmographia - Python

Researches

- The research of existing thermophysical model for asteroids
- Comparing results from the numerical model with analytical existing solutions for well known problems
- Comparing results from the thermophysical model with existing papers

Results	**Possible disparities**
- Thermophysical model for Didymoon - Preliminary work for the TIRA instrument	- Ellipsoid shape model assumed - Asteroid obliquity represented from rotation matrices - Several effects have been neglected
Troubles faced	**Further work**
- Understanding the physics from scientific papers - Optmizing codes for quickness execution and minimum accuracy required for the numerical method	- Implementating the real shape model of Didymoon - Include smaller thermal flux effects such as the mutual heat with the main body of the binary system and the self heating between facets