



Séminaire organisé par

**AIM & Le service d'Astrophysique
CEA/DSM/Irfu**



TESS : THE TRANSITING EXOPLANET SURVEY SATELLITE

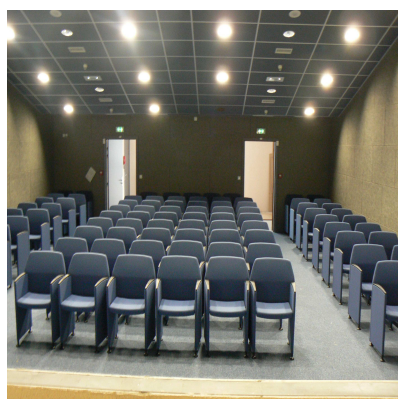
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The Transiting Exoplanet Survey Satellite (TESS) will search for planets transiting bright and nearby stars. TESS has been selected by NASA for launch in 2017 as an Astrophysics Explorer mission. The spacecraft will be placed into a highly elliptical 13.7-day orbit around the Earth. During its two-year mission, TESS will employ four wide-field optical CCD cameras to monitor at least 200,000 main-sequence dwarf stars with magnitude $1 \sim +13$ for temporary drops in brightness caused by planetary transits. Each star will be observed for an interval ranging from one month to one year, depending on the star's ecliptic latitude. The longest observing intervals will be for stars near the ecliptic poles, which are the optimal locations for follow-up observations with the James Webb Space Telescope. Brightness measurements of preselected target stars will be recorded at least as often as 2 minutes, and full frame images of all stars will be recorded every 30 minutes. TESS stars will typically be 10-100 times brighter than those surveyed by the pioneering Kepler and CoRoT missions. This will make TESS planets easier to characterize with follow-up observations. TESS is expected to find several thousand planets smaller than Neptune, including dozens that are comparable in size to the Earth. Public data releases will occur every four months, inviting immediate community-wide efforts to study the new planets. The TESS legacy will be a catalog of the nearest and brightest stars hosting transiting planets, which will endure as highly favorable targets for detailed future investigations.

JOUR ET HEURE INHABITUELS

Vendredi 4 juillet 2014



**11h00 Salle Galilée bât 709 - Orme des
Merisiers**

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