

Plenary Talk

## TIME-DOMAIN ASTRONOMY

Y. Tsapras<sup>1</sup>

<sup>1</sup> *Astronomisches Rechen-Institut, Zentrum für Astronomie der Universität  
Heidelberg*

We live in an active Universe which is constantly changing with time. The purpose of time-domain astronomy is to study and understand these variations in the cosmic arena; from tracing the trajectories of asteroids, to the discovery of new planets orbiting distant stars, to measuring light echoes from distant active galaxies. Transient phenomena can involve subtle brief changes in brightness or can be associated with violent, eruptive events. Characterization of the physical properties of a transient event often requires well-timed follow-up observations. The next generation of sky surveys and dedicated time-domain facilities will inaugurate a new era of transient science, with millions of alerts issued every night. These alert streams will trigger responsive observations on robotic telescopes. In this new era of time-domain astronomy, software will play an increasingly crucial role, where target assessment and prioritization is key.