

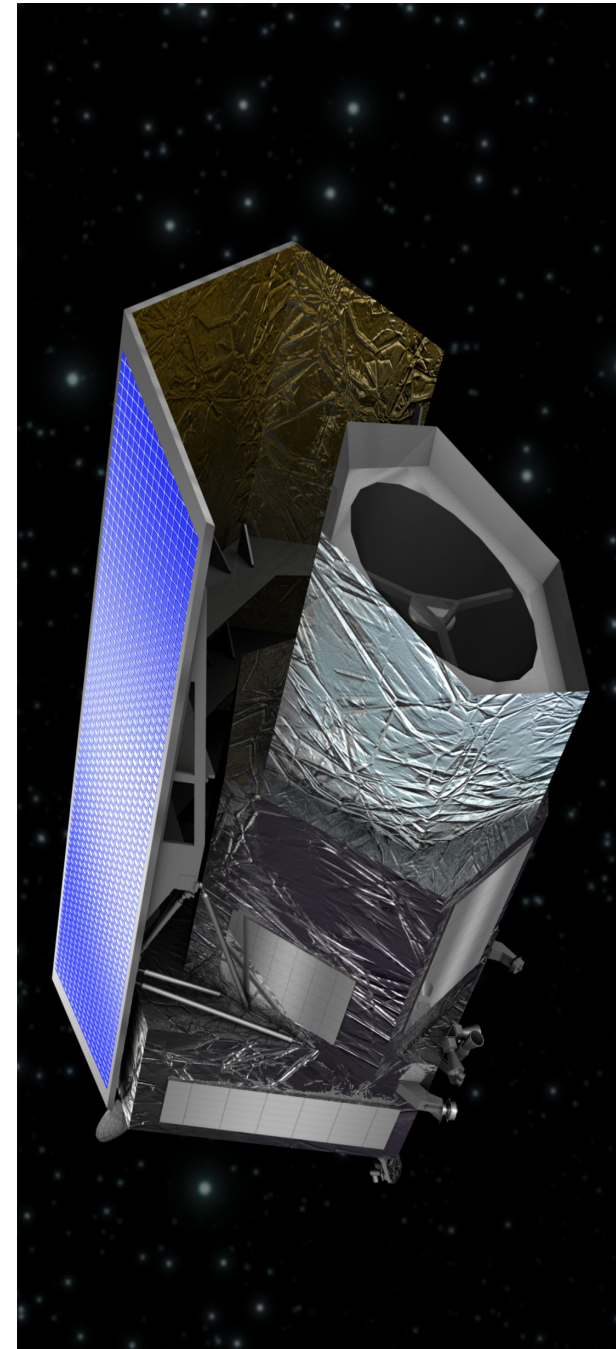
Euclid & Dark Energy

Valtteri Lindholm

PAP-PAPU-Christmas meeting

12 Dec 2016

- ESA's next big cosmology satellite
- To be launched in 2020
- High resolution optic and near infrared imaging over billion galaxies
- Near infrared spectroscopy of ~ 10 million galaxies
- Six years of observations covering over one third of the sky



Main scientific goal

- Study the accelerating expansion of the universe in detail
- Observed redshift range covers $\frac{3}{4}$ of the history of the universe
- Equation of state for dark energy or inhomogeneous expansion or modified gravity or...

Clustering & expansion

- Expansion history is mapped by evolution of physical distances
- A possible ruler are distance scales in galaxy clustering
- One distinct feature are Baryon Acoustic Oscillations (BAO) -> length scale from statistical measures

