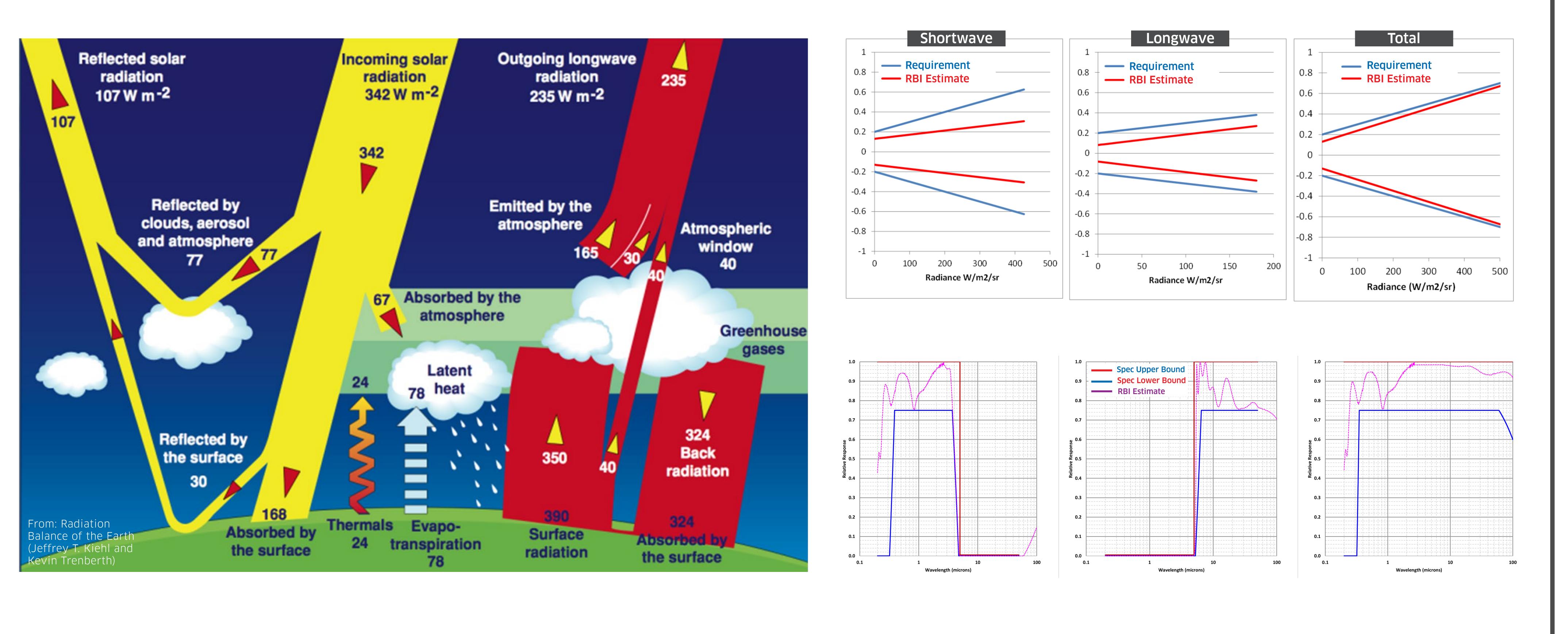
# The Radiation Budget Instrument (RBI): A New Standard for Measuring the Earth's Radiation Balance

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RBI is the next generation of ERBE/CERES instruments. It measures upwelling Earth radiance (left) over an extremely broad spectral range, from ultraviolet (0.3 microns) to far-infrared (100 microns), separated into three spectral bands. RBI includes advanced onboard calibration sub-systems to ensure the radiometric accuracy and spectral responsivity needed to fulfill the radiation balance mission (right).



### Calibration Features for Superior Mission Performance

Science Need	<b>RBI Design Fea</b>
> Earth Radiation Budget Model Validation	Ground tests at
> Trending of Radiation Budget Elements	Two IR (Infrared
	Radiometer. Sol
> Measurement Consistency of Radiation Budget	Multiple calibra
	- Total and LV
	- Total and SV
> Accurate Measurements Over Mission Life	Multiple-wavele
	on-orbit
> Reliable Data	Fully Redundan

### atures to Address Science Need

t Space Dynamics Laboratory (SDL) using precision NIST-traceable sources

ed) targets with phase change cells. Shortwave calibration target with Electric Substitution olar and lunar calibration capabilities

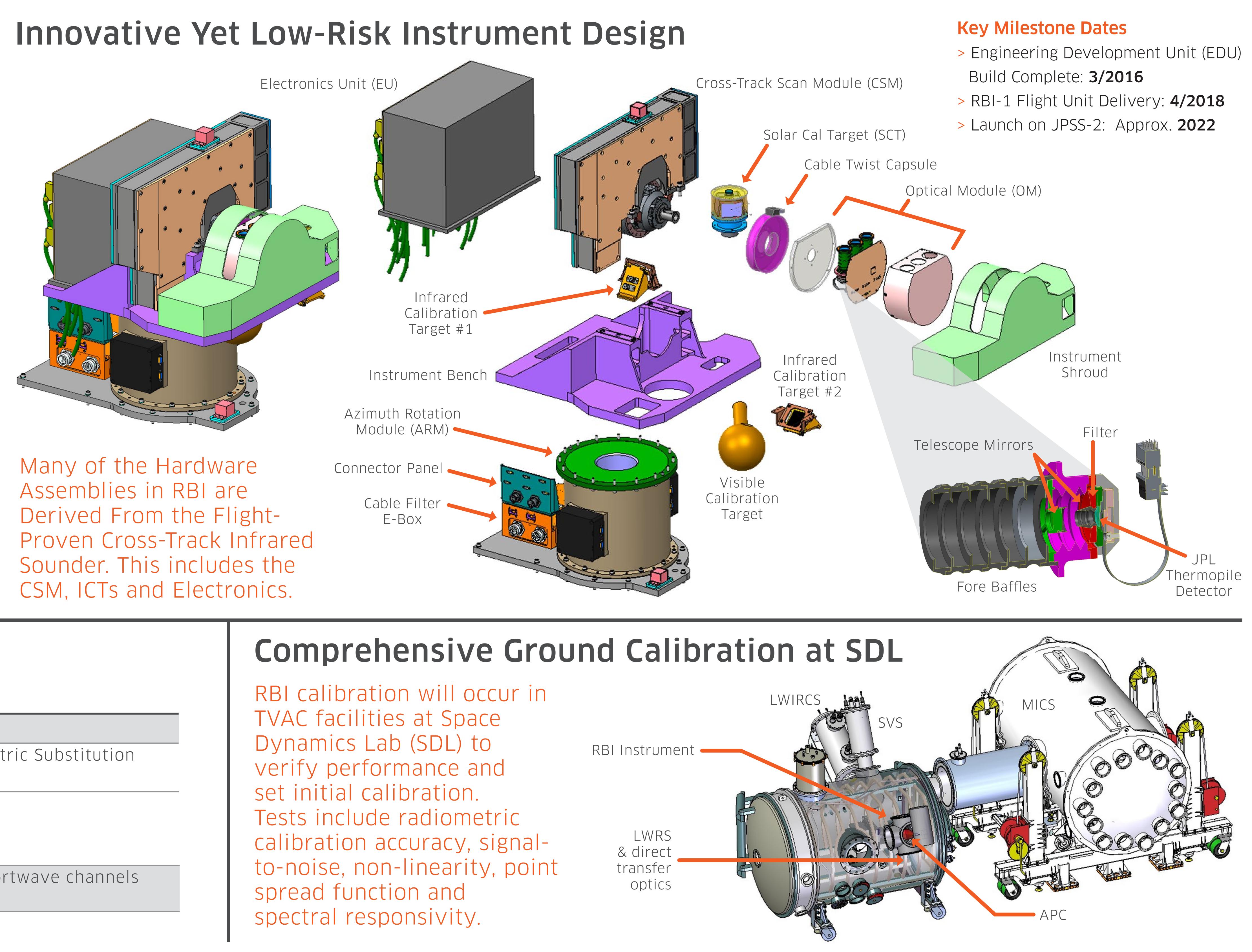
ration targets provided long term consistency across the channels

\_W view same IR target

SW view same SW target and solar diffuser

ength SW calibration target (375 to 1500 nm) characterizes Total and Shortwave channels

### ant Detectors and Electronics



Comprehensive	Ground	Cal
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