

AURA

AURA is a project of the Goddard Space Flight Center under NASA

Launch Date: 07/15/2004

Expected Lifetime: ~6 years

Mission orbital parameters

Purpose	Precession rate	Orbit radius	Time of ascending node	Inclination	Repeat time
To research composition, chemistry, and dynamics of Earth's atmosphere and to study the ozone, air quality, and climate	Sun synchronous (#6 in A-Train)	7075km (705 km above surface)	13:38	98 degrees	100 minutes (16 days for ground track)

Instr. Name	purpose	Wavelen range (units)	# of Channels	Spectral resol (units)	Horiz swath (units)	Horiz resol (units)	Vert resol (units)	Data rate	Lifetime
HIRDLS	High Resolution Dynamics Limb Sounder: Can obtain profiles over most of the earth, including upper troposphere and lower stratosphere	6-18 nm	21		Unable	500km	1km	65kbps	
MLS	Microwave Limb Sounder: Measures stratospheric temp and upper tropospheric constituents	Millimeter and sub-mm	5			5km cross track, 500km along track	3km	100kbps	5 years
OMI	Ozone Monitoring Instrument: Can distinguish between aerosol types, such as smoke, dust, and sulfates, and measures cloud pressure	350-500 nm, UV1 270-314 nm, UV2: 306-380nm	3	1.0-.45nm FWHM	(FOV) 2600 km on ground			.8 Mbps	
TES	Tropospheric Emission Spectrometer: High resolution Fourier transform spectrometer to measure all radiatively active molecular species in the lower atmosphere	3.2-15.4 μ m		.1 cm^{-1} (low res) .025 cm^{-1} (high res)	5.3km by 8.5 km swath	5.3 km	.53 km	6.2 Mbps peak 4.9 Mbps average	5 years

The HIRDLS only operates at 20% capacity because of an aperture blockage, yet it still is able to take high resolution measurements out its visible angle (nadir). It is a joint project between UCAR and Oxford.

MLS is the only non-nadir mounted sensor on AURA (mounted on the front). It is a JPL project.

OMI is a project between the Netherlands's Agency for Aerospace Programs and the Finnish Meteorological Institute.

TES has significantly greater spectral resolution than the AIRS on AQUA. It also operates in limb and nadir mode on alternating days.