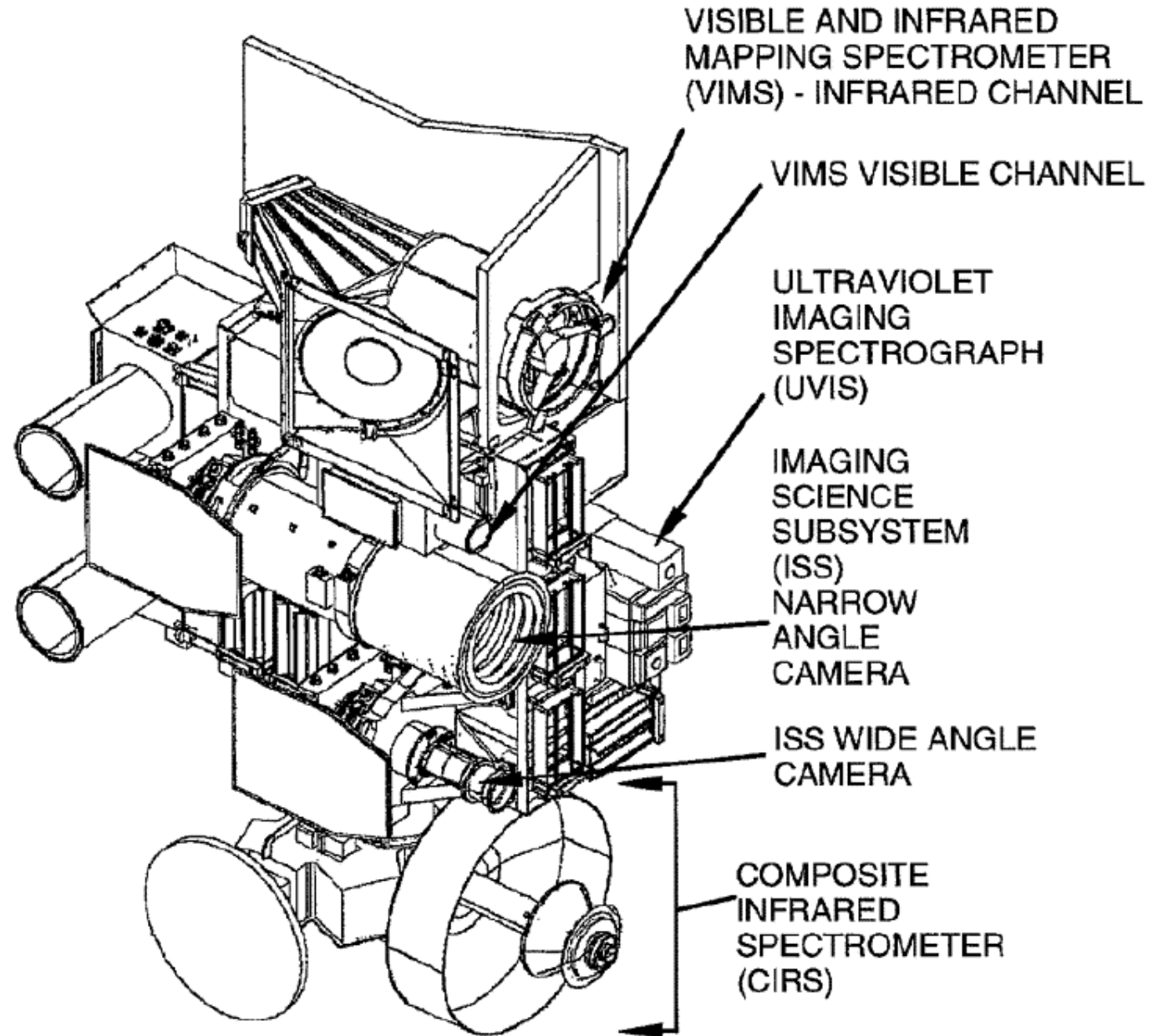


REMOTE SENSING PALLET

Cassini-Huygens

launched Oct 1997 → Nov 2017

- Composite Infrared Spectrometer
- Imaging Science Subsystem
- Ultraviolet Imaging Spectrograph
- Visible and Infrared Mapping Spectrometer

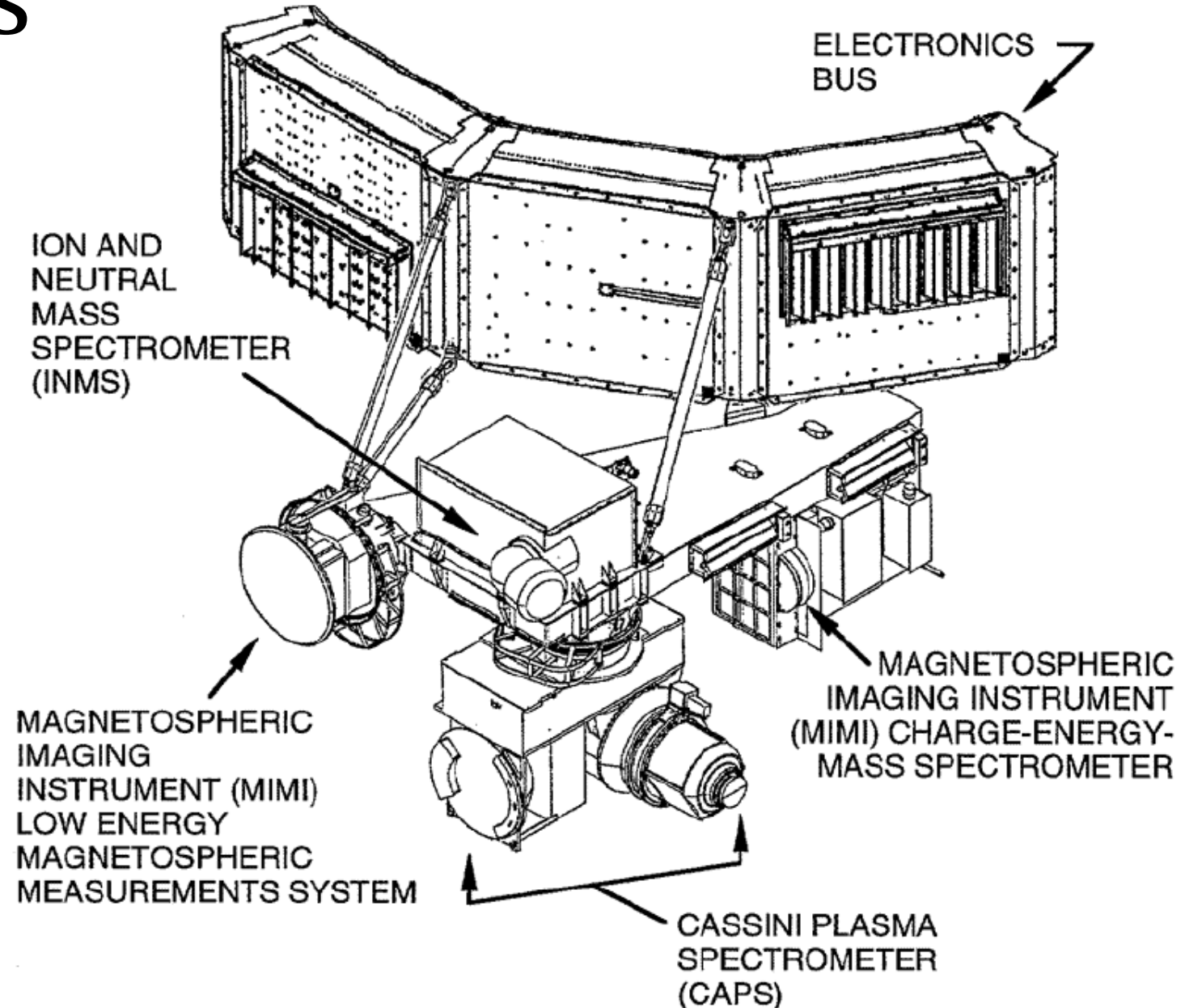


Cassini-Huygens

Field, Particle and Wave sensors

- Cassini Plasma Spectrometer (CAPS)
- Cosmic Dust Analyzer (CDA)
- Ion and Neutral Mass Spectrometer (INMS)
- Magnetometer (MAG)
- Magnetospheric Imaging Instrument (MIMI)
- Radio and Plasma Wave Science (RPWS)

FIELDS AND PARTICLES PALLET



Huygens

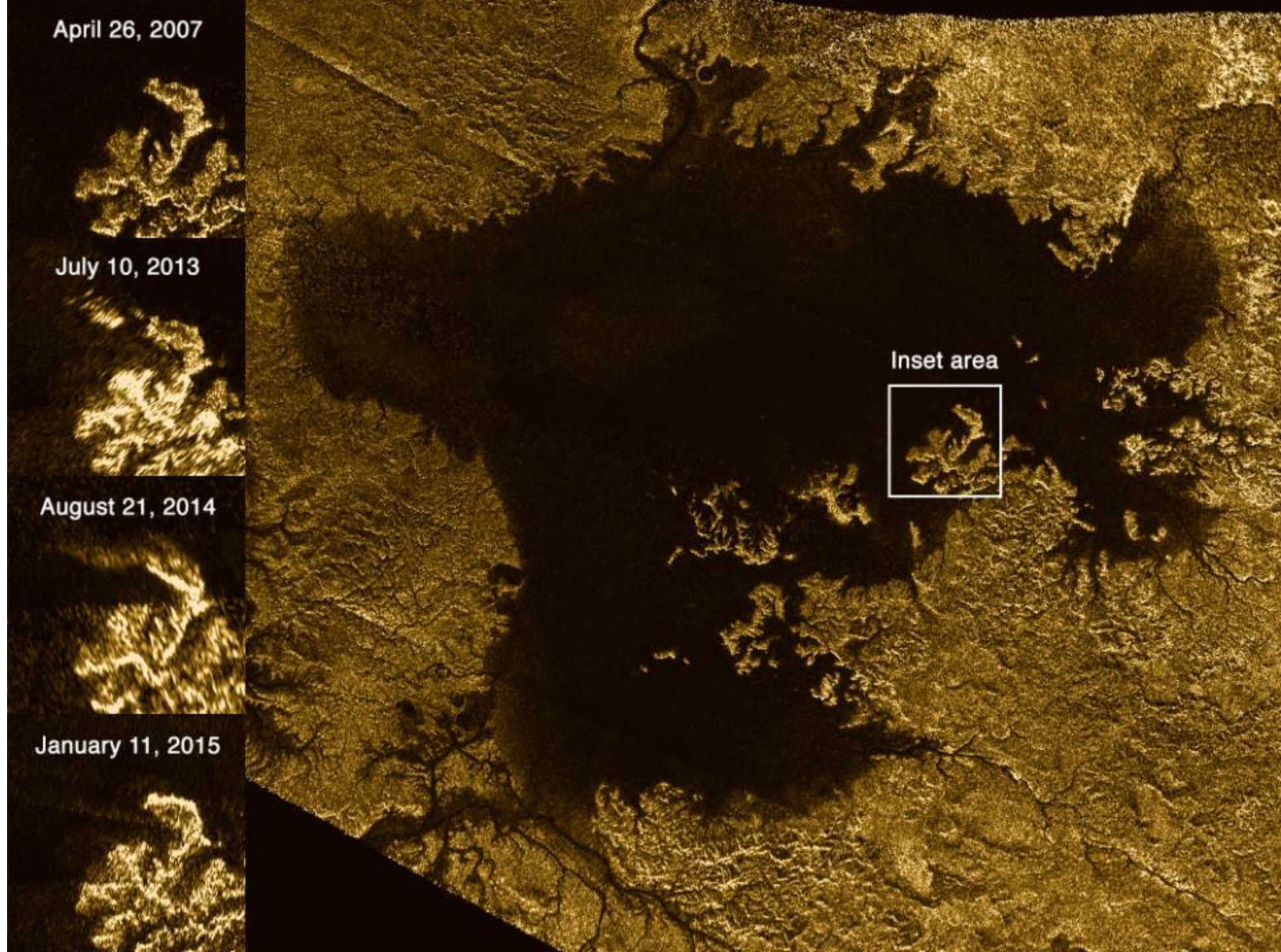
- Aerosol Collector and Pyrolyser (ACP)
- Descent Imager/Spectral Radiometer (DISR)
- Doppler Wind Experiment (DWE)
- Gas Chromatograph and Mass Spectrometer (GCMS)
- Huygens Atmosphere Structure Instrument (HASI)
- Surface Science Package (SSP)



Instruments	Participating Countries	Measurements	Techniques
<i>Optical remote-sensing instruments</i>			
Composite Infrared Spectrometer (CIRS) V. Kunde, NASA/GSFC (USA)	USA, A, F, G, I, UK	High resolution IR spectra, 10-1400 cm^{-1}	Spectroscopy using 3 interferometric spectrometers
Imaging Science Subsystem (ISS) C. Porco, Univ. of Arizona, Tucson, USA	USA, F, G, UK	Photometric images through filters, 0.2-1.1 μm .	Imaging with CCD detectors; 1 wide angle camera (61.2 mrad/fov); 1 narrow angle camera (6.1 mrad/fov)
Ultraviolet Imaging Spectrograph (UVIS) L. Esposito, Univ. of Colorado, Boulder, USA	USA, F, G	Spectral images, 55-190 nm, occultation photometry, 2 ms; H and D spectroscopy, 0.0004 nm resolution	Imaging spectroscopy, 2 spectrometers Hydrogen-Deuterium absorption cell
Visible and Infrared Mapping Spectrometer (VIMS), R. Brown, Univ. of Arizona, Tucson, USA	USA, F, G, I	Spectral images, 0.35-1.05 μm (0.073 μm res.), 0.85-5.1 μm (0.166 μm res.); occultation photometry	Imaging spectroscopy, 2 spectrometers
<i>Radio remote-sensing instruments</i>			
RADAR	USA, F, I, UK	Ku-band RADAR images 13,777.5 MHz; Radiometry, <0.5K resolution	Synthetic aperture radar; radiometry with a microwave receiver
Radio Science Subsystem (RSS) A. Kliore, JPL, Pasadena, USA	USA, I	Ka, S, and X bands; frequency, phase, timing, and amplitude	X- and Ka-band transmissions to Cassini; Ka-, S- and X-band transmissions to the Earth

<i>Particle remote-sensing and in situ measurement instrument</i>			
Magnetospheric Imaging Instrument (MIMI) S. T. Kimigis, JHU, Baltimore, USA	USA, F, G	Image energetic neutrals and ions <10 keV - 8 MeV/nucleon; composition. 10-265 keV/e ions; charge state; composition; directional flux. 20 keV-130 MeV ions; 15keV to >11 MeV electrons; directional flux	Particle detection and imaging. Ion-neutral camera (time of flight, total energy detector) Charge-energy-mass spectrometer Solid state detectors with 1) magnetic focusing telescope, and 2) aperture controlled ~45° field of view
<i>In situ measurement instruments</i>			
Cassini Plasma Spectrometer (CAPS), D. T. Young, SWRI, San Antonio, USA	USA, SF, F, H, N, UK	Particle energy/charge: 0.7-30,000 eV/e 1-50,000 eV/e 1-50,000 eV/e	Particle detection and spectroscopy. Electron spectrometer; ion mass spectrometer; ion beam spectrometer
Cosmic Dust Analyzer (CDA), E. Gruen, MPI, Heidelberg, D	G, CZ, F, N, UK, USA, ESA	Directional flux and mass of dust particles in range of 10^{-8} - 10^{-6} g	Impact induced currents
Dual Technique Magnetometer (MAG), D. Southwood, IC, London, UK	UK, G, I, USA	B DC to 4 Hz up to 256 nT. Scalar field DC to 20 Hz up to 44 000 nT	Magnetic field measurement. Flux gate magnetometer, Vector/scalar magnetometer
Ion and Neutral Mass Spectrometer (INMS), J.H. Waite, SWRI, San Antonio, USA	USA, G	Fluxes of +ions and neutrals in mass range of 1-66 amu	Mass spectrometry
Radio and Plasma Wave Science (RPWS), D. Gurnett, Univ. of Iowa, Iowa, USA	USA, A, F, S, UK, ESA	E 10 Hz - 2 MHz B 1 Hz - 20 kHz Plasma density	Radio frequency receivers. 3 electric dipole antennas; 3 magnetic search coils; Langmuir probe current

Mystery Feature Evolves in Titan's Ligeia Mare



Cassini-Huygens

Huygens descends flawlessly, January 14 2005

[Tenth anniversary rendering DISR](#)

[Display of full instrumentation](#)

[From Earth to Titan](#)

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