ARIES SPECIFICATIONS*

- ≤1km Spatial Resolution
- Daily Global Coverage
- Hyperspectral 0.4 – 15.4 µm
- Over 3000 Spectral Channels

Spectral Bands and Resolution					
Reflective	**IFOV (km)**	**λ_1 (µm)**	**λ_2 (µm**	**$\Delta\lambda$ (nm)**	**N_{chan}**
Ocean, Land, Atmos-phere	0.25	0.40	1.00	4.8	254
Snow/Ice, Cirrus, Albedo	0.50	1.22	2.18	3.9	254
Emissive	**IFOV (km)**	**ν_1 (cm^{-1})**	**ν_2 (cm^{-1})**	**$\Delta\nu$ (cm^{-1})**	**N_{chan}**
Temp, CO, CO2, CH4, N2O	1.00	2100	2950	1.0	787
Water, CH4, SO2, HNO3	1.00	1150	1613	0.5	999
O3, HNO3	1.00	880	1150	0.5	637
Temperature, CO2	1.00	650	880	0.5	674

We want to hear from you!

Please tell us about your research and how ARIES can meet your data needs. Please email or call:

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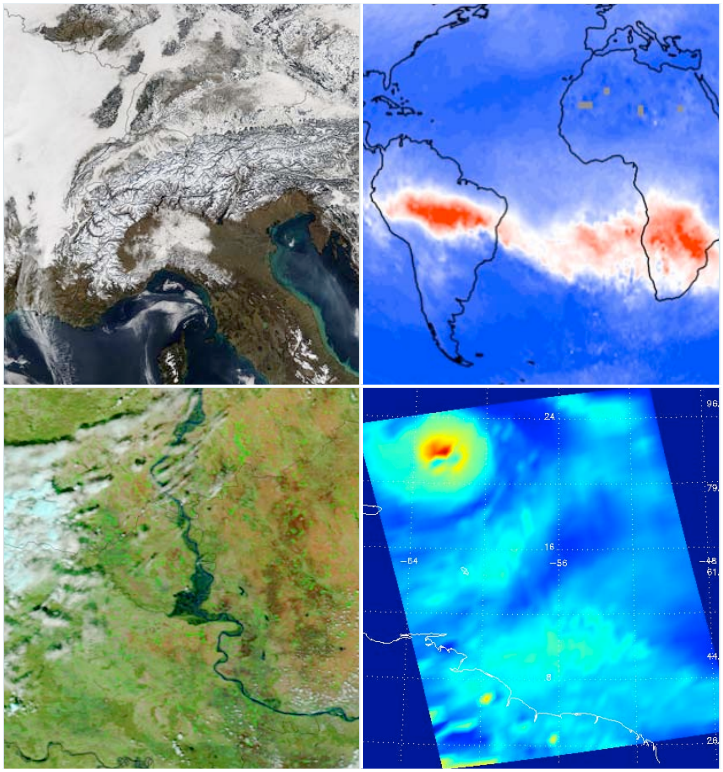
* For more information on product accuracies, see these related web sites:

- modis.gsfc.nasa.gov
- airs.jpl.nasa.gov

Instrument Characteristics		
Size	0.5 x 0.5 x 1.0	m^3
Mass	150	kg
Power	200	W
Data Rate	60.3	Mbps
Orbit	705.3	km
Swath (±55°)	256 x 2330	km
IFOV	0.25, 0.5, 1.0	km
Spectral Range	0.4 – 15.4	µm

ARIES

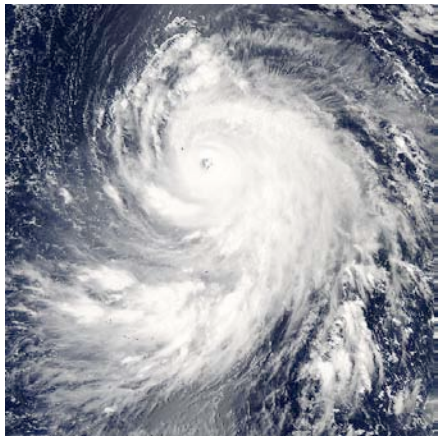
Advanced Remote Sensing Imaging Earth Science Spectrometer

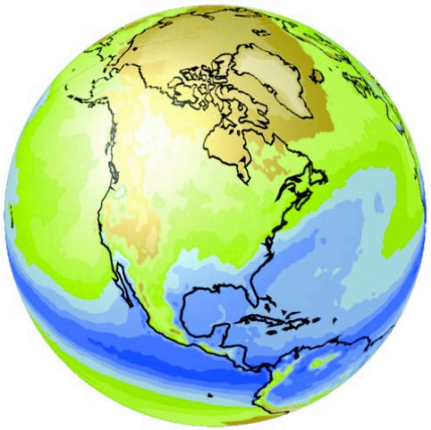


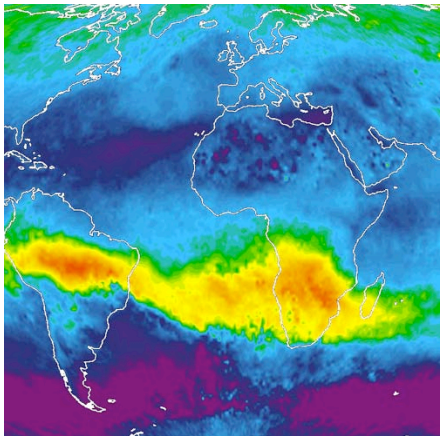
A space-based remote sensing measurement concept to support future earth system science

BUILDING ON THE LEGACY OF AIRS AND MODIS

Poster Presentation







ARIES *Combines the Capability of* AIRS *and* MODIS *for high spectral and high spatial resolution measurements of key Earth System Parameters*

The ARIES Measurement Concept will enable a new level of earth observation from space in the visible through long-wave infrared. ARIES hyperspectral resolution will improve classification of observed species on land, in the oceans and in the Earth's atmosphere. The higher spatial resolution will enable regional measurement of atmospheric constituents, improving accuracy while linking regional scale processes to the global Earth system. The higher 3-D spatial resolution water vapor information will improve weather forecasts and improve parameterization of this primary greenhouse gas in climate models.

ARIES is a comprehensive Earth remote sensing measurement concept that will build on the experience of MODIS and AIRS and greatly expand our knowledge of the interaction between Earth system environments.

ATMOSPHERE

- **Weather Forecasting**
  Global and Mesoscale Forecast Improvement
  More Cloud Free Observations
  Hurricane Forecast Improvement

- **Temperature and Water Vapor Profiles**
  2km Horizontal
  1km Vertical
  Surface Atmosphere Interactions

- **Atmospheric Composition**
  O3, CO, CO2, CH4, HNO3, SO2, N2O
  Aerosols
  Lower Troposphere to Stratosphere

- **Natural Hazards**
  CO, CO2, O3 from Fires
  SO2 from Volcanoes
  Disaster Management

- **Anthropogenic**
  Air Pollution
  Global Transport, Sources and Sinks

LAND

- **Surface Hyperspectral Reflectance and Emissivity**

- **Global Vegetation Index**
  Seasonal and Interannual Change of Global Biomass

- **Agriculture**
  Plant Health
  Improved Classification

- **Land Use Change**
  Natural Disasters
  Urban Growth
  Forest Management

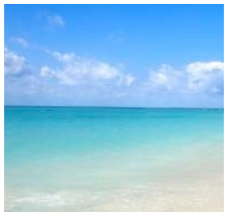
- **Natural Hazards**
  Fire Detection/Classification
  Chemical Identification

OCEANS

- **Hyperspectral Oceanography**
- **Ocean Color**
- **Primary Productivity**
- **Suspended matter**
- **Colored dissolved organic matter**
- **Sea Surface Temperature**

POLAR

- **Land and Sea Ice**
- **Surface Temperature**
- **Ozone Hole**
- **Carbon Dioxide**
- **SO2 & Aerosols**



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