



SOLMIRUS

SOLMIRUS

ATMOSPHERIC IMAGING SYSTEMS

ASIS-M1i · ASIS-M1v · ASIVA

MADE IN THE U.S.A.

OUR INSTRUMENTS

ATMOSPHERIC IMAGING SYSTEMS

Solmirus Corporation designs and manufactures **advanced all-sky imaging instruments** used by scientific institutions, defense agencies, observatories, and research organizations worldwide.

Our systems combine **precision optics, infrared and visible sensors, and integrated analysis software** to continuously monitor sky conditions and atmospheric properties — day and night, autonomously.

Each instrument is engineered for unattended, continuous operation in demanding field environments, and is backed by direct engineering support and deep application expertise.

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ASIS-M1I

All Sky Imaging System — Infrared

A dedicated infrared all-sky imaging system designed for autonomous, continuous operation. The ASIS-M1i delivers **real-time sky cover, cloud detection, and precision spectral radiance measurements** for production deployments where a single-purpose, high-reliability instrument is required.

ASIS M1i



ASIS-M1V

All Sky Imaging System — Visible

The visible-wavelength counterpart to the ASIS-M1i, providing **high-resolution all-sky imagery for cloud detection, sky quality assessment, and atmospheric monitoring**. Designed to operate standalone or as part of a multi-sensor instrument cluster alongside the M1i.

ASIS-M1V



ASIVA

All Sky Infrared Visible Analyzer

Solmirus' most capable instrument. The ASIVA is a multi-purpose infrared and visible sky imaging platform designed for research applications requiring simultaneous dual-band analysis. **Configurable filter wheels, customizable data products, and a modular architecture** make the ASIVA the instrument of choice for demanding science and advanced application development.

ASIVA



All Solmirus instruments ship with a real-time data analysis pipeline and web-based monitoring interface.

Standard data products include:

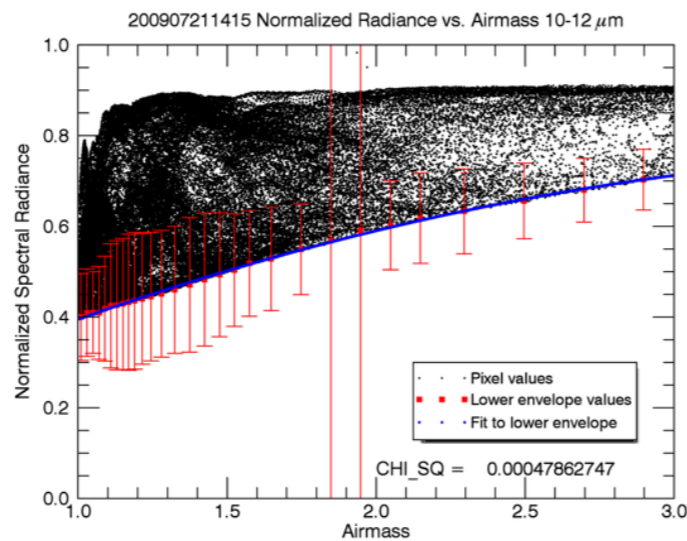
Infrared

- Cloud / no-cloud reporting
- Fractional sky cover and cloud height determination
- Photometric quality assessment
- Sky opacity and transmission determination
- Visible / IR image correlation and integration
- Precipitable water vapor (PWV) determination
- Sky and cloud brightness temperature measurements
- All-sky (180° FOV) radiometric maps and analysis

Visible

- Cloud / no-cloud reporting
- Sky Cover Percentage

ID	Instrument	Value	Unit	Status
172228119	Gain Multiplier SCL4	0.0020000000000000		OK
172228120	External Temp FDS01TEMP	19.80	°C	OK
172228121	Offset OFFSET_1	1.00		OK
172228122	High Emission Sky Cover % FDS01HE_SCI50	95.148615481541	%	OK
172228123	Visibility Only VISA	22	km	OK
172228124	Satellite Brightness Temperature ST_ZEN	285.77328274608	K	OK
172228125	Mean Ambient Temperature MDTAMPT	22.87	°C	OK
172228126	True Mean Ambient Temperature	20.07286190011	°C	OK
172228127	Reference Camera Temperature CAMTEMP	21.6	°C	OK
172228128	Mean Hot Temperature MDTHOTPT	21.6	°C	OK
172228129	Ambient Mean Radiance EXTTRACA	10.08018886224	W/m²	OK
172228130	Backscatter Temperature ENCLTEMP	24.24	°C	OK
172228131	Clearness of the Sky CLEAR	100.00000000000000		OK
172228132	Obscure of the Sky OBSOBS	0.0000000000000000		OK
172228133	Low Emission Sky Cover % FDS01LE_SCI50	0.0000000000000000	%	OK
172228134	High Emission Sky Cover % FDS01HE_SCI50	95.148615481541	%	OK
172228135	Low Emission Sky Cover % FDS01LE_SCI50	0.0000000000000000	%	OK
172228136	Gain Multiplier SCL4	0.0020000000000000		OK
172228137	External Temp FDS01TEMP	19.80	°C	OK
172228138	Offset OFFSET_1	1.00		OK
172228139	High Emission Sky Cover % FDS01HE_SCI50	95.148615481541	%	OK
172228140	Visibility Only VISA	22	km	OK
172228141	Satellite Brightness Temperature ST_ZEN	285.47328274608	K	OK



Custom data products can be developed by the customer or by Solmirus to suit specific application requirements. Visible system data products available upon request.

DATA PRODUCTS

- Clearness: 0.223
- Obscure: 178.00
- High Sky Cover %: 95.15
- PWV (mm): 12.30
- Low Emission Sky Cover %: 88.2468
- High Emission Sky Cover %: 283.77

SYSTEM STATUS

- Back Temp: 95.76 °C
- Mean Temp: 31.71 °C
- Relative Humidity: 9.83 %
- W-B Temp: 24.73 °C
- Backdoor Temp: 29.63 °C
- W-B Camera Temp: 0.00 °C

RUN LOG

- 2025-03-21 11:07 pm | Status: Waiting Proximity Proximity Run
- 2025-03-21 11:07 pm | Status: done
- 2025-03-21 11:07 pm | Status: Cloudy Weather
- 2025-03-21 11:07 pm | Status: Stopping Run Sequence 2025-03-21 11:07 pm
- 2025-03-21 11:07 pm | Status: System Unread
- 2025-03-21 11:07 pm | Status: W-B Probe = 0.00%
- 2025-03-21 11:07 pm | Status: W-B Probe Temp = 0.00
- 2025-03-21 11:07 pm | Status: Backdoor Temperature 29.63
- 2025-03-21 11:07 pm | Status: Ambient Temp 24.73
- 2025-03-21 11:07 pm | Status: Humid Ambient 9.83
- 2025-03-21 11:07 pm | Status: Mean Ambient 31.71
- 2025-03-21 11:07 pm | Status: Waiting Proximity Run
- 2025-03-21 11:07 pm | Status: Waiting W-B Probe Run
- 2025-03-21 11:07 pm | Status: Time Period: 0.0 & Acquisition Frames: 10
- 2025-03-21 11:07 pm | Status: Acquiring W-B Image with Filter 4
- 2025-03-21 11:07 pm | Status: W-B Probe = 0.00%
- 2025-03-21 11:07 pm | Status: W-B Probe Temp = 0.00

ATMOSPHERIC SCIENCE

Research-quality all-sky measurements of sky cover, spectral radiance, cloud temperature, cloud height, and optical depth.

OPTICAL COMMUNICATIONS (FSO) & DIRECTED ENERGY

Real-time atmospheric awareness for laser communication networks, high-energy laser systems, and ground-to-space optical links. Turbulence profiling, transmission monitoring, and site characterization for operational programs

SOLAR POWER FORECASTING

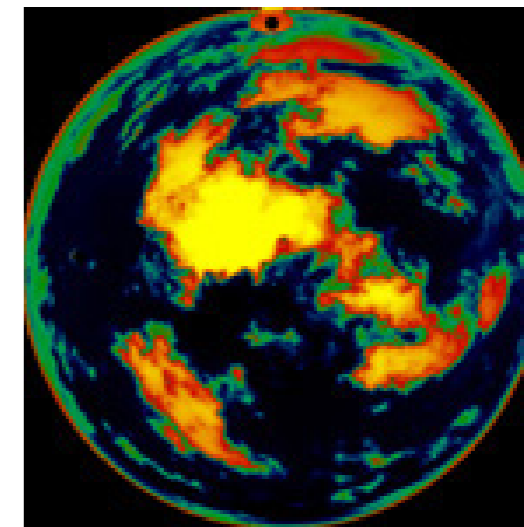
Continuous sky monitoring for site surveying, irradiance forecasting, cloud cover tracking, and solar resource assessment.

ASTRONOMY & OBSERVATORY OPERATIONS

Sky quality reporting, photometric condition monitoring, telescope scheduling automation, and observatory go/no-go decision support.

ADDITIONAL APPLICATIONS

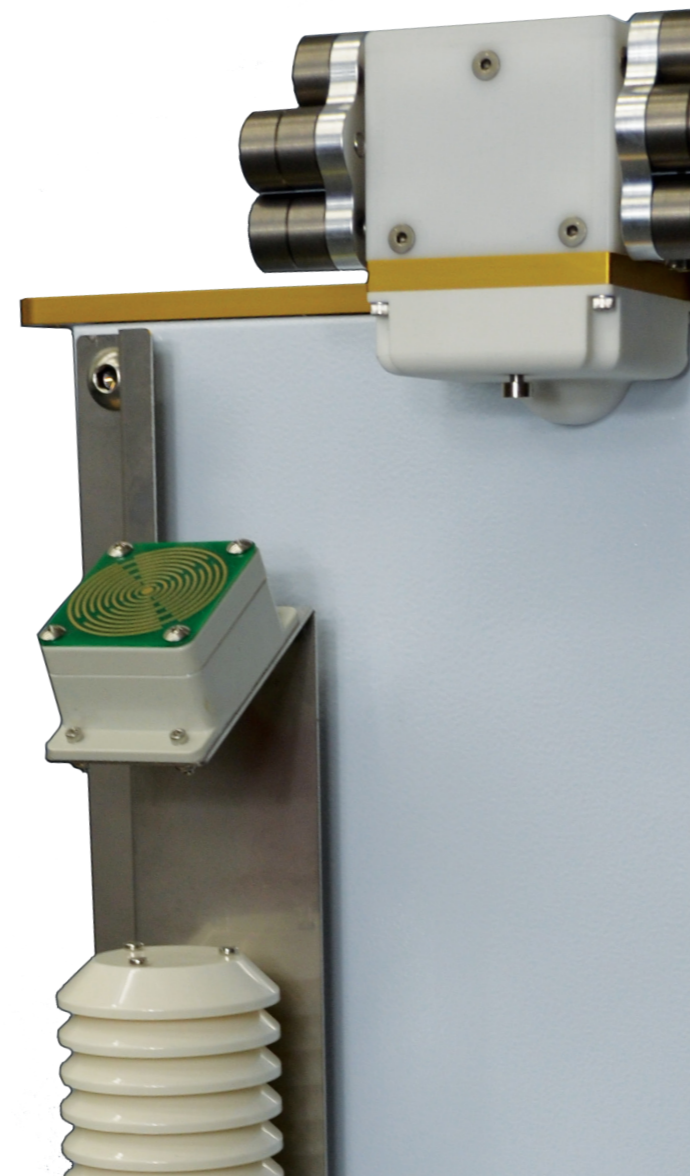
Weather and meteorology stations · Cloud detection and sensing · Aviation



ALL SYSTEMS INCLUDE

Enclosure	Ruggedized, white powder-coated weatherproof stainless steel and aluminum
Thermal Management	Peltier heating/cooling subsystem with internal temperature sensors
Computer	Ruggedized industrial embedded control computer
Operating Temp	-50°C to +50°C
Power	120 / 230V AC
Connectivity	Ethernet (Cat 5/6 or Fiber Optic)
Data Pipeline	Real-time analysis pipeline with web-based monitoring interface
API	Comprehensive API for instrument control, data retrieval, and automation
Access	Accessible via Web UI, API, and Remote Desktop
Mounting	Stainless steel base with mounting holes

* Additional options and specifications vary by model.



SOLMIRUS Miratlas

In partnership with Miratlas, Solmirus delivers the only complete, off-the-shelf solution for Atmospheric Characterization for Reliable Ground-to-Space Laser Communications.

Combining Solmirus' all-sky infrared and visible imaging instruments with Miratlas' atmospheric turbulence and propagation characterization technologies, our integrated platform gives optical communication programs the real-time environmental intelligence they need to operate with confidence.



ABOUT SOLMIRUS

Since 2004, Solmirus has deployed all-sky infrared and visible imaging systems across a broad range of scientific, defense, and commercial applications.

Our instruments operate at research institutions, government agencies, and operational facilities worldwide — trusted by organizations including NASA JPL, NOAA, USAF, PNNL, IITM and organizations globally. Every deployment is backed by deep application expertise and direct engineering support.

CONTACT US

Solmirus Corporation

622 Elkton Dr., Colorado Springs, CO 80907

solmirus.com

info@solmirus.com

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