

COMPANY PROFILE

**From space to Earth,  
minimizing the  
impact of weather  
on your business**





# Harnessing space to solve problems on Earth

Combining Spire radio occultation, soil moisture, ocean winds, sea ice, and publicly available data with our proprietary assimilation improves initial conditions, creating significantly more accurate forecasts.

Radio Occultation (RO) is a leading data source for enhancing the accuracy of weather forecasts

Our satellite constellation ensures coverage of every location on Earth, providing greater precision in data collection and analysis

Spire and public data, combined with our proprietary assimilation, yield more accurate forecasts

## Space-powered solutions providing accuracy for critical global industries

### Key figures



**100x per day coverage**  
by fully deployed satellite constellation



**30+**  
ground stations



**70+**  
antenna systems



**35+**  
launch campaigns



**400+**  
employees from 50+ countries



**~745 customers**  
across 65 countries



**9 offices**  
across 3 continents

# We deliver actionable intelligence

Helping our customers grow their business faster, more profitably, and sustainably.



Gov't / Municipal



Financial Services



Supply Chain



Energy



Oil & Gas



Agriculture



Insurance



Construction



Aviation



Maritime



Research



Mining

AIDASH

AMPERON

8CLIMATE  
CONNECT

DigiFarmz  
SMART AGRICULTURE

Dominion  
Energy

EDISON

ESP | LOGISTICS  
TECHNOLOGY

grape ag

MAN Energy Solutions

Mantle Labs

moixa

myairops

NVIDIA

QUIRON

rebase.energy

Red Bull  
RACING

SIGNAL4D

STRATOLAUNCH

weather  
trends360

WEATHER  
TOOLS

# From space to Earth, we minimize the impact of weather on your business

We empower decision-makers with accurate weather data to make informed choices, reducing their environmental footprint and improving well-being. Committed to a better world, we use our expertise to help communities prepare for and mitigate the effects of extreme weather events, one data point at a time.

## Our mission

Leverage space-powered data to build a climate-resilient world with unparalleled global coverage, especially in under-observed areas like open oceans and remote regions.

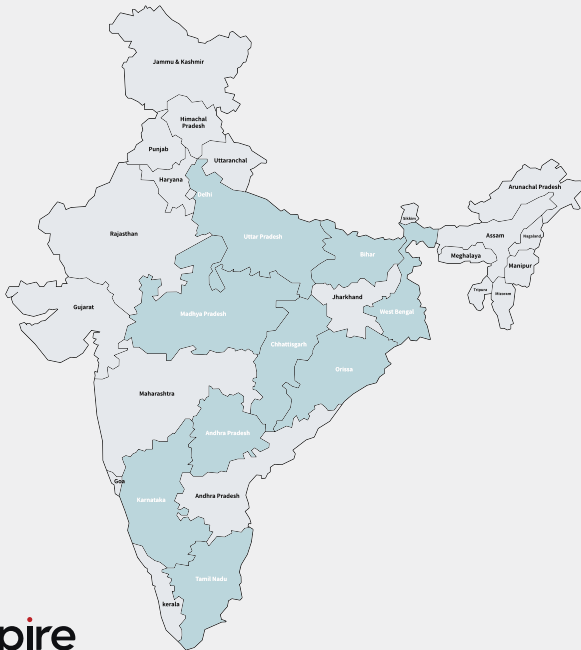
### CASE STUDY



## We believe what's good for the planet is also good for business.

### Before Spire Weather & Climate

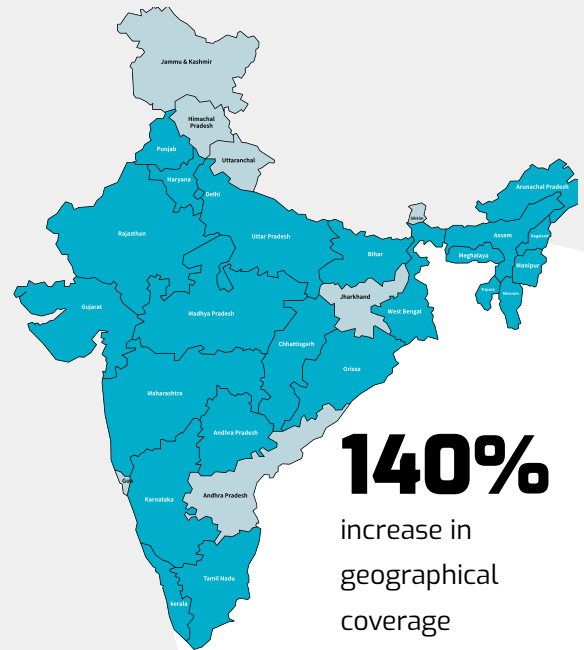
- Poor quality forecasts
- Limited visibility



Mantle Labs, a remote sensing company offering digital agricultural solutions to international farmers, increased its pest and disease forecast accuracy by 95% using Spire's satellite-powered weather data.

### After Spire Weather & Climate

- Precision weather forecasts
- Increased weather coverage





# Over ten years of research & infrastructure development

Our commitment to the planet began with investing in our technology infrastructure, resources, and people.



## 24/7 global coverage

Between our satellites, ground stations and office locations, we truly operate 24/7.

## Fully deployed satellite constellation

Launched, with over 600 years of spaceflight heritage across the cluster.



"At Spire, we are committed to advancing weather forecasting to meet the growing needs of industries that depend on precise and accurate data."



**Dr. Tom Gowan**

Team Lead, Weather  
Prediction & AI  
Spire Weather & Climate



"The world is witnessing an increase in extreme and high-impact weather events. Now, businesses require highly scalable solutions to monitor weather impacts and optimize their operational efficiency."



**Mike Eilts**

General Manager  
Spire Weather & Climate

# A leap forward in meteorology

## Spire is the largest producer of RO data.

Every day, thousands of radio occultation profiles are gathered globally. These profiles, combined with other data sources, feed into Spire's proprietary weather models.



"Accurate and reliable weather forecasts are crucial to cope with the impacts of weather hazards and climate change and to help businesses thrive; these forecasts depend on high-quality observations of the atmosphere. Spire's impressive satellite constellation provides important observations across the globe that enhance our forecasting capability."



### **Alan Thorpe**

Scientific Advisor,  
Spire Global Board Member,  
UK Met Office

## Validation by leading weather agencies

- Spire's RO data is ranked among the top factors improving predictions, according to ECMWF.
- RO profiles collected from Spire's satellite constellation enhance weather forecasting metrics globally, as confirmed by NASA.
- Validation studies demonstrate the high quality and reliability of Spire's RO data, becoming an increasingly valuable tool for meteorologists and weather experts.
- We incorporate RO data and other datasets from our satellites and various sources to create our proprietary global weather models. This enables us to generate accurate 15-day weather forecasts worldwide.



# What is Radio Occultation technology?

Spire Weather & Climate employs radio occultation technology through its LEMUR satellites to create a global observation network for continuous atmospheric monitoring. This technology measures temperature, pressure, and humidity, gathering thousands of atmospheric profiles daily to improve weather forecast accuracy.

Spire's low-orbit satellites receive GNSS signals passing through the atmosphere, enabling vertical scanning and detailed data collection. The company's ongoing investment in space hardware and the refinement of weather data through proprietary data assimilation, artificial intelligence, and machine learning continually enhance predictive weather models, providing exclusive and precise weather solutions.

## The added value of weather to our customers



"Spire was a game changer in our application, the weather data provided was easy to use and considerably increased the accuracy of Quiron's algorithms. In Portugal, before Spire, Quiron used a combination of ground weather stations and other weather data sources. Using data from Spire, we improved the resolution and quality of the data in remote locations and it allowed for a 30% increase in accuracy of fire risk zoning."



**Diogo Machado**  
CMO, Quiron



"Our meteorology team at Dominion Energy appreciates a model offering this insight 6 days into the future. It's a tool to help us make operational decisions. The model viewer and interface offers stunning visualizations and has been a long-desired application for our internal weather briefings."



**Jeff Mock**  
Lead Meteorologist,  
Dominion Energy

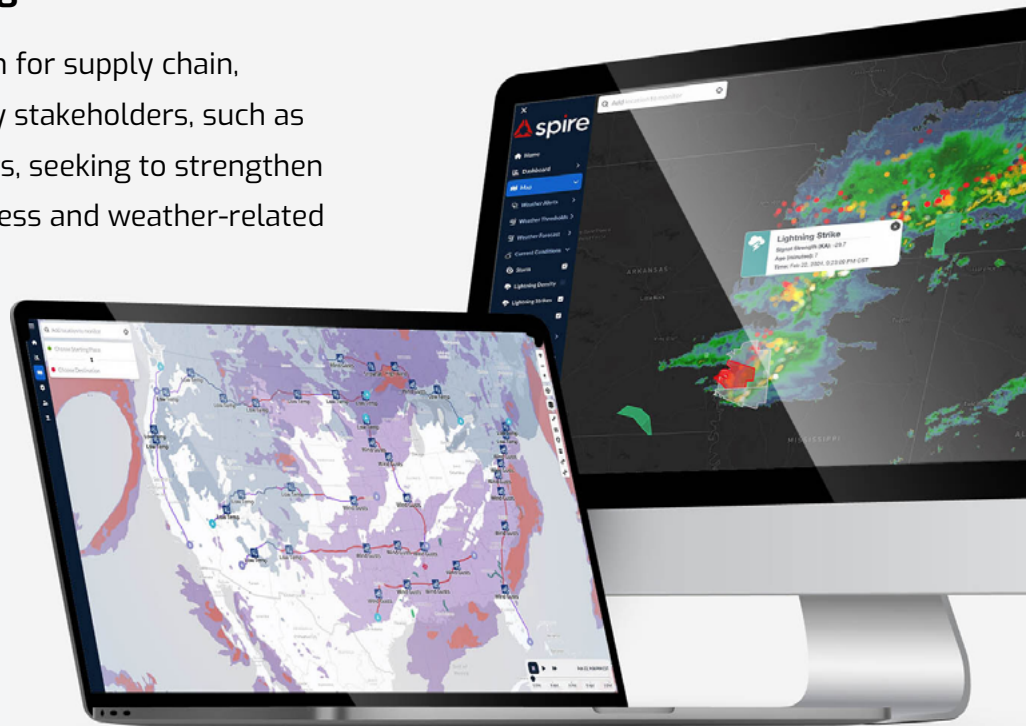


# DeepVision™ Weather Risk Solution

**Monitor your entire network of assets, both fixed and moving, in a single viewer.**

DeepVision is a decision support system for supply chain, emergency operation centers and utility stakeholders, such as operations managers and safety officers, seeking to strengthen their global situational weather awareness and weather-related decision-making.

- **Weatherproof your business**
- **Optimize for any weather**
- **Scale accordingly**
- **Manage with ease**
- **Prioritize your workforce**
- **Ensure uninterrupted efficiency**



## Key features



### Real-time visibility

Gain real-time visibility into your entire asset or logistical network, including static and moving assets.



### Actionable visualization

Access unparalleled weather intelligence designed to empower smarter decisions.



### Real-time weather alerts

Take action only when necessary. Receive personalized alerts for any weather condition.



### Personalized dashboards

Identify disruptions, filter by threat type, and view detailed forecasts specific to individual needs.



### Intuitive interface

Configure, oversee, and track weather in relation to all of your business locations.



### Interactive map

Set alerts, optimize routes, and analyze weather in relation to your assets.



### Route planning

DeepVision delivers accurate forecasts about weather-related challenges along any route.



### 24/7 expert support

We also have a dedicated team available to provide comprehensive onboarding and priority support.



# DeepVision™ Weather Support Team

Manage risk with real-time insights from expert meteorologists.

Navigate environmental challenges with confidence using our comprehensive live weather support for enhanced risk management and productivity.

- Employee safety
- Asset monitoring
- Production optimization
- Event support

## Designed around your needs



### 24/7 monitoring

Our team watches over your business assets around the clock, providing timely updates and alerts.



### Direct access to experts

Professional weather advice is always within reach, for real-time consultations or detailed forecasts.



### Customized forecasts

Tailored forecasts provide precise information on how weather will impact your operating areas.



### Proactive alerting system

Stay informed with proactive alerts from DeepVision, be it anticipated or sudden weather changes.



"Thanks to Spire, we can dynamically allocate our resources in response to weather forecasts, significantly reducing our operational risks."



**Energy  
Distribution Leader**

## Your own team of meteorologists

Experience the power of a dedicated team of expert meteorologists for less than the cost of one full-time professional. Our team is available for consultation via phone, chat, video, and email. Protect your operations, minimize risks, and enhance efficiency with our strategic weather monitoring services.



**Learn more**

# DeepInsights™ Weather API and data solutions

Our Weather API provides multiple endpoints, allowing users to access a wide range of datasets.

Our fast, modern RESTful APIs are responsive, user-friendly and easily integrated with analytics platforms, enabling customers to quickly derive value by minimizing technological overhead.

- Wind energy weather
- Solar energy weather
- Maritime and ocean weather
- Agriculture weather
- Aviation weather
- High-resolution forecasts

## Our portfolio of weather data solutions



### Current Weather

Access current weather conditions worldwide with a resolution of 3 km.



### Global Weather Forecast

Precise weather forecasts for any use case, enhanced by our AI-based algorithms.



### Point Optimized Forecast

Hyper-local, highly specific weather forecasts for any location on the globe.



### High-Resolution Forecasts

Medium-range forecasts covering the entire continental US and Europe.



### Historical Weather

Analyze events across years, months and days to make informed business decisions.



### Tropical Storm Tracks

Global data of all active and historical tropical cyclones from 1990 through today.

#### GRIB2:

File download, global forecast - Following industry standards

#### JSON:

for individual point requests

#### WMS:

Geospatial map image layers

## Effortless integration

Integrate weather data into your analytics platforms quickly and easily. Spire provides comprehensive API documentation for developers, along with tutorials and a public GitHub repository containing code and integration examples.



[Learn more](#)



[API status monitoring page](#)





# DeepInsights™ Cirrus Data Viewer

Experience a comprehensive suite of tools and data visualization capabilities.

Our weather application combines advanced meteorological insights with user-friendly features to deliver a powerful tool for weather professionals and decision-makers needing accurate and detailed weather information. Whether you're tracking a storm, investigating possible temperature swings in critical energy markets, or analyzing historical forecast weather trends, Cirrus provides the tools and data you need to make informed decisions.

- **Know what's coming**
- **Plan for disruptive weather**
- **Compare model trends**



## Key features



### Spire's proprietary data

Access Spire's advanced global and high-resolution models for accurate and detailed weather forecasts.



### Stunning maps and visuals

Visually appealing maps and graphics enhance the understanding of complex weather patterns.



### Customize layer thresholds

Identify and track significant weather changes, based on your thresholds, for your areas of interest.



### Custom geospatial data

Overlay proprietary or user-generated data for enhanced analysis and localized weather insights.



### Detailed historical weather

Track temp fluctuations, precip levels, and wind patterns to understand daily weather trends.



### Meteogram-style charts

Visualize predicted changes in temps, precip and more in hour-by-hour interactive forecasts.



### Variety of map styles

From satellite imagery to terrain maps and more, customize your viewer for optimal clarity.



### Save user preferences

Easily recall preferred settings and data configurations for efficient and tailored weather monitoring.

# Spire High-Resolution Forecast

Unlock the future of weather forecasting with Spire's proprietary space-powered data.

Spire delivers precise, high-resolution weather forecasts using satellite-derived data, including radio occultation, ocean winds, and soil moisture. Our forecasts offer hourly predictions up to six days ahead.

- Access US and European domains today
- Hourly output extending to six days at 3 km resolution
- Multiple updates per day with the most recent data possible
- Space technology with enhanced initial conditions
- Advanced data assimilation techniques
- 24/7 weather support from meteorologists



[Learn more](#)

## Key features



### Advanced technology

We utilize our network of satellites to merge proprietary data with reputable sources.



### Extended lead time

Unlike typical high-resolution forecasts that cover two to three days, ours extend to six days.



### Reliable accuracy

Our team of data scientists and meteorologists ensures accurate and reliable forecasts.



### 1:1 weather support

Access 24/7 guidance from Spire's expert DeepVision™ Weather Support team.



### Unique vantage point

Enhance power and price forecasts by using satellite-derived weather data to your advantage.



### Make profitable decisions

Advanced weather insights and analytics have a direct positive impact on revenue.



### Quick and easy to use

Ingest and visualize weather data easily with advanced APIs or custom Spire platforms.



### Custom forecast solutions

Align the Spire High-Resolution Weather Forecast with your operational needs.



# Soil Moisture Insights

Discover a world where precision meets sustainability.

Powered by our constellation of GNSS-R satellites and Machine Learning and Artificial Intelligence technologies, Spire's comprehensive Soil Moisture Insights offers an unparalleled understanding of soil moisture levels worldwide backed by a comprehensive 40-year data archive.

- Commodity traders
- Insurance innovators
- Farmers and agricultural managers
- Data scientists
- Urban planners
- Environmental researchers

## Spire's soil moisture monitoring is a game changer



### High-resolution data

Explore the world with clarity at 6 km, 500 m, or down to 100 m resolution.



### Global coverage

Precise soil moisture information for any location, updated daily.



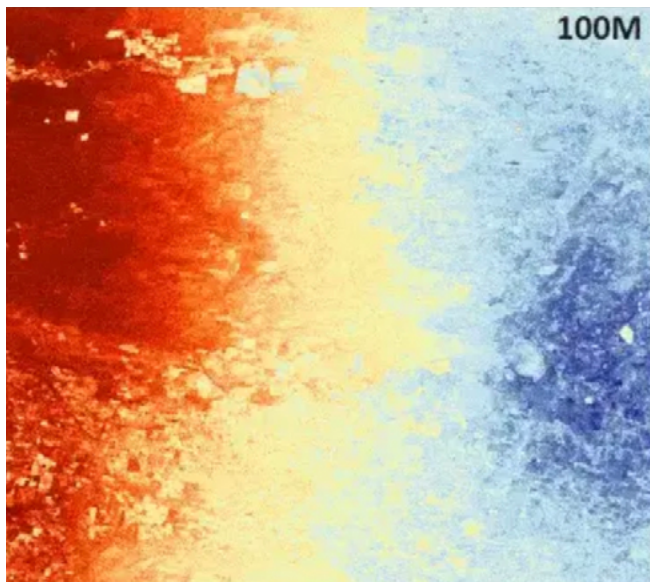
### Robust historical archive

Benefit from over 40 years of historical soil moisture data.



### Seamless integration

Integrate Spire's data into your systems via an intuitive API.



## Join the movement for a better-informed and more sustainable world

With Spire, stepping into the future of agricultural and environmental management means embracing innovation that empowers your decisions and enhances the resilience of our global ecosystem. Our mission is to elevate your operations with unparalleled insights into the Earth's most fundamental resource: its soil.



[Learn more](#)

# Deep Navigation Analytics™

**Weather intelligence platform for maritime, leading the transition towards a sustainable future.**

Spire's Deep Navigation Analytics™ Platform is a centralized maritime weather data hub powered by Spire's space technology for optimizing voyages, enhancing vessel performance, and weather monitoring solutions. Get easy access to critical maritime weather data through maritime weather APIs, actionable intelligence and visualization and decision support tools.

- **Combined maritime & AIS data**
- **Maritime insights**
- **Maritime data**



**Learn more**



## Key features



### Streamline your operations

Gain easy access to global and granular maritime datasets



### Solve multiple use cases

From shipping efficiency to port management, you're in control.



### AI-ready weather data

Access maritime weather data to optimize your decision making.

## Voyage Optimization

Get actionable intelligence and strategic insights for your planned route with Spire's Voyage Optimization. Receive recommended vessel route options based on vessel-specific models and characteristics and your desired outcome (best TCE, minimum fuel, best time or Just-in-time arrival).

## Vessel Performance

Improve your fleet's average vessel performance with instant, swift access to advanced maritime weather information via reliable AI-ready data which includes both smoothed, hourly AIS and weather conditions along any route for any vessel, providing continuous and granular datasets for optimized training.

## Port Efficiency Solution

Enhance your port situational awareness with a complete understanding of your static and moving assets while visualizing disruptive weather conditions within the same online dashboard. Improve efficiency and reduce downtime for your onshore port operations.





## GET IN TOUCH

Spire is a global provider of space-based data, analytics and space services, offering unique datasets and powerful insights about Earth so that organizations can make decisions with confidence in a rapidly changing world. Spire builds, owns, and operates a fully deployed satellite constellation that observes the Earth in real time using radio frequency technology. The data acquired by Spire's satellites provides global weather intelligence, ship and plane movements, and spoofing and jamming detection. Spire also offers Space as a Service solutions that empower customers to leverage its established infrastructure to put their business in space.

**To learn more, visit [spire.com](https://spire.com).**

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