



Space weather capability

The Bureau of Meteorology provides trusted, reliable and responsive weather, water, climate, ocean and space weather services for the Australian region – all day, every day. Our space weather team supports national security, defence, emergency services and industry.

Bureau of Meteorology – who we are

The Bureau of Meteorology is Australia's national weather, climate and water agency. We observe and provide forecasts, warnings and long-term outlooks from the Antarctic to north of the equator, and from the Indian Ocean to the Pacific.

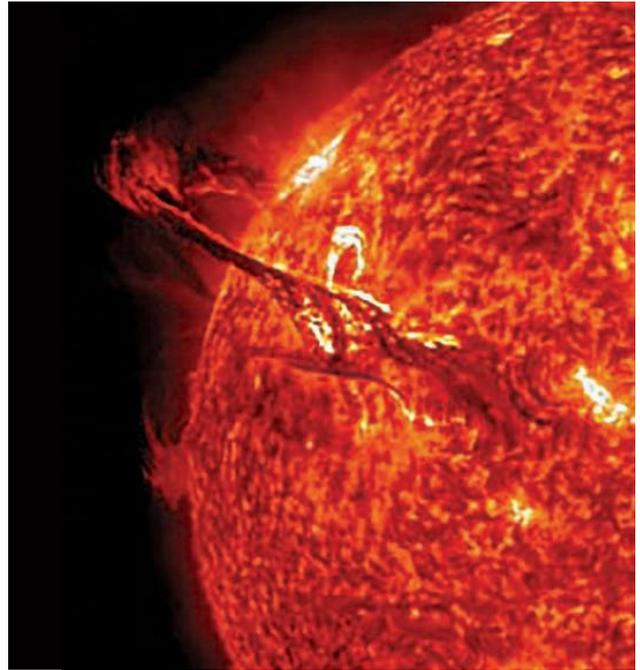
We analyse and explain trends, foster greater public understanding and use of our information for decision making and continue to extend our understanding of, and ability to forecast, conditions that affect our stakeholders.

Space weather capability

The Bureau provides space weather information and warning services to the Australian region and beyond. We work closely with the space industry and operations exposed to space weather risk – such as aviation, energy, defence and telecommunication industries – to tailor forecasts and warnings to their specific needs.

Our space weather capability focuses on severe to extreme events that may threaten critical infrastructure, including:

- radio communications
- satellite operations
- GPS navigation
- mineral exploration
- pipeline protection
- electricity supply networks.



Solar flare. (Image courtesy of NASA)

Our Space Weather Observation Network

Australia's location in the southern hemisphere, combined with its clear skies, low noise and low light interference mean it is uniquely placed to contribute to the international space community. Space weather has global reach, so international cooperation is a vital component of our ability to protect critical infrastructure.

The Bureau's Space Weather Observation Network spans the Australasian region and Antarctica, and includes:

- the Learmonth Solar Observatory
- a network of magnetometers, riometers and ionosondes to provide continuous, real-time observations
- global navigation satellite system total electron content scintillation monitors.

We exchange our data with Australian and international organisations via our World Data Centre.

What we offer

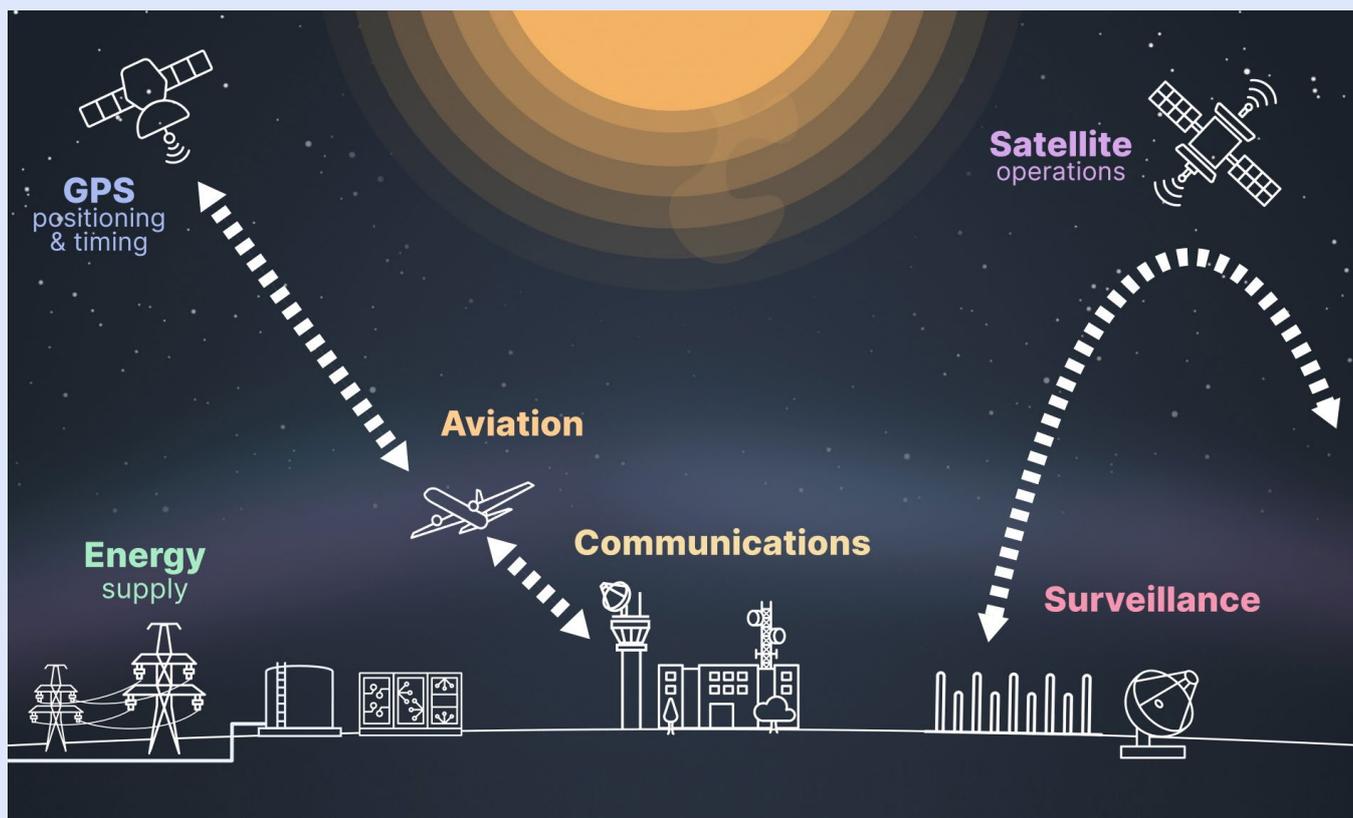
The Bureau of Meteorology's contribution to applied research, combined with our extensive observation network and advanced warning service, means we provide high quality, tailored solutions for our stakeholders and the Australian community.

Our space weather capability delivers:

- space weather warnings and alerts
- tailored space weather services
- real-time and historical observations
- high frequency radio advice and planning tools
- consultancy and technical support
- space weather training.



Australian Space Weather Forecasting Centre, Bureau of Meteorology. (Image by Meaghan Coles)



Space weather can disrupt many of Australia's critical services, such as Global Positioning System (GPS) navigation and radio communications. It can also damage satellites and the electricity transmission network and affect aviation and air traveller safety.

Contact us



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