

News in Brief

ATRAD Staff

ATRAD Principal Scientist Dr Bronwyn Dolman adds BDM for Innovation to her role
Viral Modi has joined as an engineer
Yang Li has joined as a junior engineer and China liaison
Allan Lacey has been promoted to workshop manager
Mike Ellingford has joined as a hardware technician
Mauricio de Souza Carlet has joined as a hardware technician

Recent Installations

- Software for BoM BLP radars Australia
- Dongfang remote meteor receiver, China
- Transmitter power upgrade (8 to 24 kW), SOUSY Svalbard Radar
- High power (192 kW) transmitters, Jicamarca MST Radar, South America
- Two remote meteor receiver systems for the CONDOR system, South America (relocation)

Pending Installations

- 13 Radar controllers BoM BLP and STP radars Australia
- 24 to 48 kW power upgrade, IGG Meteor Radar
- 24 kW Meteor Radar, NSSC, China
- 24 to 48 kW power upgrade, NSSC Meteor Radar
- 6-channel Remote Receiver, NSSC, China
- 6-channel Remote Receiver, NSSC, China
- 24 to 48 kW power upgrade, USTC Meteor Radar
- 6-channel Remote Receiver, USTC, China
- 24 to 48 kW power upgrade, IGG Meteor Radar
- 6-channel Remote Receiver, IGG, China
- 6-channel Remote Receiver, IGG, China
- 8 kW Green Meteor Radar, Katherine, IAP, Germany
- 2 8 kW meteor radars, IAP (Palau, Brazil)

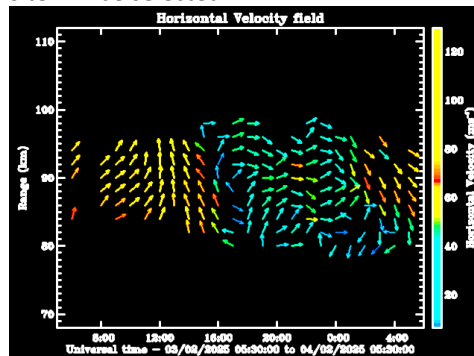
Copper Theft from the BP Field Site

Repeated break-ins, equipment destruction, and theft of copper from the Buckland Park field site have forced its closure. ATRAD has removed its hardware associated with its ST/meteor radar from the site while the Adelaide University considers the future of the site

Recent Events

New 55 MHz Meteor Receive Site Established

A new 55 MHz meteor receive site has been established near Murray Bridge in South Australia in cooperation with DST Group and the Space and Atmospheric Physics Group at the Adelaide University. The system is located about 100 km from the main 55 MHz meteor radar transmitter site at Buckland Park. This is the first part of the project which will include a new 26 MHz meteor radar at the Murray Bridge site. 24-h winds obtained from the remote site are shown in the figure below. If the BP Field site resumes operation, transmission will be continued from there. If not, a new site will be selected.



BoM to leave Adelaide Airport site

The Australian Bureau of Meteorology has advised it will be quitting its Adelaide Airport site in the future. ATRAD has subsequently removed and will relocate the 55 MHz and 449 MHz BLP radars previously operated there. Plans are being made for the continued operation of the equipment at other sites to be advised in the future.

With the closure of the BP Field site, the AAP site, and the Darwin site, ATRAD is currently not operating any radars. We are actively looking at new locations for our L-Band, 449 and 55 MHz BLPs, and for our ST/Meteor radar. The MUTA receiving site remains active, waiting for a remote transmitter.

Darwin Meteor Radar Damaged in Bushfire and closed



Figure 1 burnt ground in the antenna array

A bushfire damaged cabling and antennas of the Darwin Meteor Radar. The photo above shows some of the burnt area around two of the meteor radar receive antennas. Equipment in the radar enclosure was not damaged. Remarkably, the radar continued to operate for some months before failing although there were clear indications of errors in matching and phasing. The site has now been declared unsafe and a new location for the radar has been found near Katherine, NT.

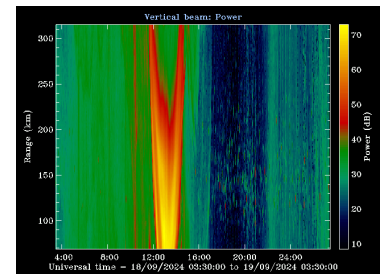


Figure 2 24-h of SNR for the Darwin radar

As an aside, this low latitude (12°S) radar was affected by ionospheric interference as shown in the example above.

17th International Workshop on Technical and Scientific Aspects of iMST Radar and Lidar (MST17/iMST4), Beijing, 2027

The next MST meeting is planned for Beijing, China in September 2027.

Bronwyn Dolman and Chris Adami attended the previous MST16/iMST3 hosted by the IAP in Germany in September 2024

(<https://www.iap-kborn.de/en/news/events/mst16/>).

		Recent Publications with ATRAD coauthors
ATRAD supports COTL Since 2025 ATRAD has been providing maintenance and repair support to the COTL mesonet in South Australia (see https://mesonet.com.au/). ATRAD has provided a remote HF receiving system for the SAURA radar on Andøya An HF remote receiving system has been provided to operate with the IAP SAURA HF radar system on Andøya, Norway. ATRAD develops a technique for multiple transmitter networks ATRAD has developed software to allow for multiple transmitters operating at the same frequency within the same coherent radar network. This has been applied to the Chinese Multistatic Meteor Radar network, and will be applied to the Alta and Tromsø radars in Norway ATRAD provides meteor radars for the IAP LoLa project ATRAD is providing three 8 kW meteor radars for the IAP LoLa project (see https://www.iap-kborn.de/en/institute/infrastructure/instruments-models). One will be installed in Australia at Katherine, Northern Territory. It will be a green radar operating on solar and battery power	ATRAD continues the investigation of the utility of Wind Profiling Radars for Satellite Observations ATRAD is continuing to investigate the utility of using Wind Profiling radars to observe satellites in LEO and MEO. These are an increasing source of noise as the number of satellites in this region rapidly increases but also serve a useful target for deriving parameters such as total electron density, and for investigating electro-magnetic ion cyclotron (EMIC) plasma waves in the Pc1 (0.2–5 Hz) frequency range. Satellites also serve as potential calibration targets for multi-channel radar systems such as interferometers and meteor radars. ATRAD supports the expansion of the CONDOR multistatic meteor radar system to four receive sites ATRAD is supporting the expansion of the CONDOR multistatic meteor radar system from two to four remote receiving sites. CONDOR is operated by Embry-Riddle Aeronautical University (ERAU), USA. Two IAP remote receiver sites previously located in southern Argentina are being relocated to operate with the CONDOR system in Chile. The two new sites are El Complejo Astronómico El Leoncito (CASLEO), Chile, and Rodeo, Argentina. The CASLEO remote receiver is operational, and Rodeo will be brought up in October 2026.	1. Maolin Lu, Wen Yi, Xianghui Xue, Iain Reid, Tingdi Chen, Guozhu Li, Baiqi Ning, Jinsong Chen and Na Li, Revisiting the One-Time Camelopardalids meteor shower using a meteor radar chain in the northern hemisphere, ApJ, accepted 2026 2. Vincent, R. A., J.-H. Kim, C. Lee, G. Jee, D. J. Murphy, I. M. Reid, Interannual variability of mean winds and the semidiurnal tide in the Antarctic summer mesosphere-lower thermosphere, JGR-Atmospheres, 2026, https://doi.org/10.1029/2025JD046204 3. Jie Zeng, Gunter Stober, Wen Yi, Xianghui Xue, Iain Reid, Chris Adami, Baiqi Ning, Guozhu Li, Xiankang Dou, A Lidar-Validated Comparison of Two Multistatic Meteor Radar-Based Wind Retrieval Methods for Spatially Resolved Horizontal Winds, JGR-atmospheres, 2026, https://doi.org/10.1029/2025JD046277 4. David A. Holdsworth, Iain M. Reid, Bronwyn K. Dolman, Jonathan M. Woithe, and Richard C. Mayo, Ionospheric vertical total electron content measurements using VHF radar observations of Starlink satellites, Remote Sens. 2026, 18(8), 1165; https://doi.org/10.3390/rs18081165 5. Jianyuan Wang, Wen Yi, Xianghui Xue1, Jianfei Wu, Hailun Ye, Tingdi Chen, Jian Li, Jie Zeng, Jinsong Chen, Zonghua Ding, Na Li, Robert A. Vincent, Iain M. Reid, Paulo P. Batista, Ricardo A. Buriti, Toshitaka Tsuda, Nicholas J. Mitchell, Xiankang Dou, Impact of the Madden-Julian oscillation on mesospheric migrating diurnal tides observed by multiple equatorial meteor radars, JGR-Atmospheres, December 2025, https://doi.org/10.1029/2025JD044411 6. Maolin Lu; Xianghui Xue; Iain Reid; Tingdi Chen; Jinsong Chen; Na Li, (2025) Comparison of Meteor Shower Observed by Two Collocated Meteor Radars at Low Latitudes, ICARUS, https://doi.org/10.1016/j.icarus.2025.116610 7. Iain M. Reid, Rüdiger Rüster, Peter Czechowsky and Gerhard Schmidt, (2025) Dual VHF Radar Measurements in the Lower Atmosphere, Remote Sensing, https://doi.org/10.3390/rs17071261 8. Qiao, Z., Liu, A. Z., Stober, G., Fuentes, J., Vargas, F., Adami, C. L., and Reid, I. M.: (2025) Chilean Observation Network De Meteor Radars (CONDOR): multi-static system configuration and wind comparison with co-located lidar, Atmos. Meas. Tech., 18, 1091–1104, https://doi.org/10.5194/amt-18-1091-2025.

Other Items of Interest	
Woomera ST Radar 24 years on	
 <i>Figure 3 A view through the antenna array of the Woomera radar</i>	The Woomera Wind Profiling Radar (32°S, 138°E) was supplied to the National Aeronautic Laboratory of Japan by ATRAD and installed at Woomera in March 2002. This was a 100 kW VTX6 single channel Doppler radar with a 144-Yagi phased array antenna. It was successfully used to support flight trials of a rocket launched scale model of an SST aircraft. After completion of the trials, the radar was transferred to the Australian Bureau of Meteorology (BoM) in 2006 by what had then become JAXA. The radar is currently mothballed. The radar hardware has long been superseded, but the basic antenna array is of the same build standard as used in the four BoM ST wind profilers operated by the BoM elsewhere in Australia.
Previously the “Reflections” newsletter ATRAD Newsletter September 2026 15-61006-105	  Find newsletters and brochures at 