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Supplement of

Continuous meteorological surface and soil records (2004–2024) at the Met Office surface site of Cardington, UK

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Table S1. Core meteorological instrumentation. Note the logging interval is not equal to the archived time step (=30 minutes). Supplementary Section S1 shows an exhaustive list of all core variables with start and end times.

Measurement device	Manufacturer	Model	Variable	Derived properties	Height	Logging interval	Notes
Tri-axis ultrasonic anemometer	Gill Solent	HS-50	3D winds; sonic temperature	mean wind; (co)variances of U, V, W & T	50, 25, 10, 2, 0.4 m	10 Hz	Time period: 2004–2024 2m height from 2011; 0.4 m height from 2022. See Section 3.2.1
High-speed infrared hygrometer	Licor	LI-7500	Specific humidity, carbon dioxide	Specific humidity, w'q' covariance, CO_2 mixing ratio	10 m	10 Hz	Time period: 2004–2024 Affected by precipitation and dew on optics; not an absolute instrument. See Section 3.2.2
Platinum resistance thermometer	Vector Instruments	T302	Temperature	-	50, 25, 10, 1.2 m	60 s	0.1°C accuracy, screened, aspirated. Section 3.2.1
Platinum resistance thermometer	Rotronics	Hygroclip2, PT100 type	Temperature	-	0.4, 0.15, 0.08 m	60 s	Time period: 2016–2024 0.1°C accuracy , screened, aspirated 0.08m is the air at "grass tips". Section 3.2.1
Humicap	Vaisala	HMP155 capacitive R2	Relative humidity	-	50, 25, 10, 1.2 m	60 s	1% error for RH< 90 %; 1.7% error for RH 90–100 %, screened, aspirated. Section 3.2.3
Humicap	Rotronics	Hygroclip2, HT-1 capacitive	Relative humidity	-	0.4, 0.15, 0.08 m	60 s	1 % error , screened, aspirated, heated humicap sensor. Section 3.2.3
Transducer	Setra	Model 270	Barometric pressure	-	1.5 m	60 s	0.1 hPa accuracy
Tipping bucket	Met Office	Mk V	Rainfall	-	Surface	60 s	0.2 mm resolution
Chilled mirror hygrometer	Michell	Series 3000	Dew and frost point temperature	-	1.2m	60 s	0.1°C accuracy. Section 3.2.3

Table S2. Aerosol and visibility instruments (logged as part of the core data). Note the logging interval is not equal to the archived time step (=30 minutes). *although visibility can be estimated from the scattering coefficient using Koschmieder's Law (Haywood et al., 2008), such derived data is not included in the core archive files. The disdrometer was non-core with its own NetCDF files as described below in S10.

Measurement device	Manufacturer	Model	Variable	Derived properties	Height	Logging interval	Note
Laser disdrometer	Thies	No. 5.411 Laser precipitation monitor	droplet size and velocity	hydrometeor size distribution, fall speed	2 m	60 s	Time period: 2019–2024 (intermittently). 0.786 µm wavelength; 160 µm minimum diameter; 0.001 mm h^{-1} sensitivity; includes snow/hail diagnostics; 15% error in rain, 30% in snow. Section 3.2.5
Xenon flashlamp & photodetector	MRI	1550B	475 nm total scattering coefficient	visibility*	3 m	60 s	Time period: 2004–2010 heated to 30°C (RH<60%)
LED & photodetector	Optec	NGN-3a	550 nm total scattering coefficient	visibility*	4 m	60s	Time period: 2011–2020 Heated to 38°C, dehydrated (RH<40%) aerosols < 2.5µm using a spiral impactor
Active forward scatter	Belfort	6230A	visible range	-	2 m	60 s	Time period: 2004–2024. 2 Hz native frequency. Active forward scatter from xenon lamp
Active forward & back scatter	Biral	HSS VPF-730 present weather sensor	visible range	Hydrometeor weather code	2 m	60 s	Time periods: 2011–2014 and 2017–2021. 0.88 µm active sensing
Active forward scatter	Campbell	CS125 present weather sensor	visible range	Hydrometeor weather code	2 m	60 s	Time period: 2021–2024. 5 m to 100 km range; 0.05 mm h^{-1} sensitivity to rain rate, includes snow diagnostics; 0.05 mm h^{-1} precip sensitivity; 8% accuracy for vis<600m; 10% accuracy for vis<10km

Table S3. Core radiation instruments (logged within core data) between 2004 and 2024 (except as noted). Note the logging interval is not equal to the archived time step (=30 minutes). Supplementary Section S1 shows an exhaustive list of all core variables (which the radiation instruments form a part of) with start and end times.

Measurement [W m^{-2}]	Manufacturer	Model	Height	Logging interval	Note
Shortwave irradiance	Kipp&Zonen	CM22 pyranometer	4 m	60 s	Downwelling hemispherical, downwelling diffuse, upwelling
Shortwave irradiance	Kipp&Zonen	CM21 pyranometer	4 m	60 s	downwelling hemispherical diffuse; upwelling (reflected) hemispherical
Longwave irradiance	Kipp&Zonen	CG4 pyrgeometer	2 m upwelling, 4 m downwelling	60 s	4.5–42 μm; downwelling and upwelling hemispherical
Surface radiometric temperature	Heitronics	KT15D pyrometer	2m	60 s	1 m^2 of grass scene; 8–14μm window region; concrete scene between 2004–2005 only

Table S4. Subsoil sensors (logged as part of the core data). Note the logging interval is not equal to the archived time step (=30 minutes). Supplementary Section S1 shows an exhaustive list of all core variables with start and end times, of which the soil sensors form a part of.

Variable	Manufacturer	Model	Depth	Logging interval	Note
Temperature	Delta-T	PRT	1, 4, 7, 10, 17, 35, 65, 100 cm	60 s	Time period: 2004–March 2012
Temperature	Delta-T	ST2-396 thermistor	1, 4, 7, 10, 17, 35, 65, 100 cm	60 s	Time period: From March 2012–2024
Soil water content	Delta-T	ThetaProbe ML2/ML3	2.5, 10, 22, 57, 160 cm	60 s	Time period 2004–2024 except for '2.5 cm' sensor (from January 2020) positioned vertically into the soil and is a nominal depth
Soil water content	Delta-T	PR2	10, 20, 30, 40, 60,	60 s	Time period: from 2016–2024. Column probe with six sensing

			100cm		depths; South site only
Ground heat flux	Hukseflux	HFP01SC flux plate	2 cm	60 s	Time period: 2012–2024; self-calibration every 13 h
Water table depth	Druck	1830 pressure transducer		60 s	Time period 2004–2024. Pressure transducer at two locations labelled as ‘south’ and ‘west’

Table S5. Major changes to the 2, 10, 25 and 50 m instrumentation. humicap=generic capacitance-based humidity sensor. hmp155 refers to the more sophisticated Vaisala humidity device. Licor refers to the LI-7500 hygrometer. Numbers in brackets are the sensor serial numbers (where available).

Date YYYY-MM-DD	**UTC hh:mm**	**Event**
2004-05-28	0000	start 50m sonic (H000092) with humicap
2004-09-06	1413	start 25m sonic (H000094) with humicap
2004-11-22	1125	start 10m sonic (H000095) with Licor LI-7500 hygrometer
2004-12-14	1605	Setra pressure sensor added to 10m
2008-06-05	1300	50m sonic stopped
2008-06-11	1535	change 50m humicap
2008-07-01	1531	50m sonic (H000030) starts
2008-10-09	1400	25m sonic stopped
2008-10-10	1500	update 2m humicap calibration
	1507	25m sonic (H000070) starts
2010-05-27	1535	add second licor to 10m for test period
2010-09-09	1136	remove second licor from 10m
2010-11-18	1212	2m sonic (H000029) starts
2011-07-07	1044	change 50m humicap
2013-06-24	1300	50m sonic stopped
2013-07-03	0741	50m sonic (H000083) restarted
2013-07-19	0741	change 50m humicap to hmp155 (J2750028)
2013-09-11	1532	change 25m humicap to hmp155 (J2750026)
2013-10-25	1353	remove pressure sensor from 10m
2013-11-05	0000	add hmp155 to 10m (J2750027)
2014-03-17	0757	change 10m hmp155

2014-03-18	1156	change 25m hmp155 (J2750027)
2015-08-03	0754	change 10m hmp155 (K123002)
	0847	change 25m hmp155 (J2750027)
2015-08-03	0754	change 2m hmp155 (J2750025)
2015-08-04	0835	change 50m hmp155 (L2020480)
2015-10-05	0827	change 2m sonic (H153801)
2017-03-27	1500	stopped 25m sonic logging
2017-03-31	0654	change 25m sonic and hmp155 (H141202); change 10m hmp155
2017-09-13	0000	change 2m hmp155 (L2020479)
2018-05-24	1521	change 25m hmp155 (K2320023)
2019-07-11	1358	change 25m hmp155 (K2320022)
2019-07-23	0850	change 50m hmp155 (K2320021)
2019-11-28	1607	change 2m hmp155 (K2320025)
2019-12-09	1501	change 10m hmp155 (K2320019)
2021-02-26	1303	new 25m hmp155 (S5330332)
2021-03-02	1227	new 50m hmp155 (S5330329)
	1223	add hmp155B (S5330333) to 25m
2021-03-03	1536	add hmp155B to 50m (S5330330)
2022-08-04	1051	add 0.4m sonic (H000070)
2024-01-08	1000	50m sonic stopped
2024-01-09	1300	25m sonic stopped
2024-01-25	1614	new hmp155 (S5330331)
	1618	new 25m (H140603) sonic
2024-01-29	0902	new hmp155 (V0450142)
	0925	new 50m sonic (H000084) remove all hmp155s
2024-02-06	0955	remove all hmp155s from 25m sonic
2024-02-07	1300	50m sonic stopped
2024-02-12	1438	remove hmp155 from 10m sonic
2024-03-07	0751	50m (H000084) sonic restarted logging
2024-03-08	1442	new 25m (H000092) sonic logging
2024-06-20	0637	add licor to 2m sonic until end of period
2024-11-09	0000	10m sonic (H2320019) failure

2024-11-20	0912	new 10m sonic (H141901) logging

Table S6. Variables in the disdrometer NetCDF files**.**

variable name	**long_name**	**units**
time (calendar=gregorian)	Time at end of measurement period	hours since 1970-01-01 00:00:00Z
synop_4677_5min	5 minute mean SYNOP code (Table 4677)	code_table="-1=Sensor error, -2=Unknown precipitation, slight, -3=Unknown precipitation, moderate, -4=Unknown precipitation, heavy, 0=No precipitation, 51=Drizzle, slight, 53=Drizzle, moderate, 55=Drizzle, heavy, 58=Drizzle and rain, slight, 59=Drizzle and rain, moderate/heavy, 61=Rain, slight, 63=Rain, moderate, 65=Rain, heavy, 68=Rain/drizzle and snow, slight, 69=Rain/drizzle and snow, moderate/heavy, 71=Snow, slight, 73=Snow, moderate, 75=Snow, heavy, 77=Snow grains, 87=Ice pellets, slight, 88=Ice pellets, moderate/heavy, 89=Hail, slight, 90=Hail, moderate/heavy
synop_4680_5min	5 minute mean SYNOP code (Table 4680)	code_table="-1=Sensor error, 0=No precipitation, 40=Unknown precipitation, 41=Unknown precipitation, slight/moderate, 42=Unknown precipitation, heavy, 51=Drizzle, slight, 52=Drizzle, moderate, 53=Drizzle, heavy, 57=Drizzle and rain, slight, 58=Drizzle and rain, moderate/heavy, 61=Rain, slight, 62=Rain, moderate, 63=Rain, heavy, 67=Rain/drizzle and snow, slight, 68=Rain/drizzle and snow, moderate/heavy, 71=Snow, slight, 72=Snow, moderate, 73=Snow, heavy, 74=Ice pellets, slight, 75=Ice pellets, moderate, 76=Ice pellets, heavy, 77=Snow grains, 89=Hail, slight
metar_5min	5 minute mean METAR code (Table 4678)	code_table="?????=Sensor error, -UP=Unknown precipitation, slight, UP=Unknown precipitation, moderate, +UP=Unknown precipitation, heavy, NP=No precipitation, -DZ=Drizzle, slight, DZ=Drizzle, moderate, +DZ=Drizzle, heavy, -RADZ=Drizzle and rain, slight, RADZ=Drizzle and rain, moderate, +RADZ=Drizzle and rain,

		heavy, -RA=Rain, slight, RA=Rain, moderate, +RA=Rain, heavy, -RASN=Rain/drizzle and snow, slight, RASN=Rain/drizzle and snow, moderate, +RASN=Rain/drizzle and snow, heavy, -SN=Snow, slight, SN=Snow, moderate, +SN=Snow, heavy, -SG=Snow grains, slight, SG=Snow grains, moderate, +SG=Snow grains, heavy, -GS=Small hail, slight, GS=Small hail, moderate, +GS=Small hail, heavy, GR=Hail
synop_4677_1min	1 minute SYNOP code (Table 4677)	code_table="-1=Sensor error, -2=Unknown precipitation, slight, -3=Unknown precipitation, moderate, -4=Unknown precipitation, heavy, 0=No precipitation, 51=Drizzle, slight, 53=Drizzle, moderate, 55=Drizzle, heavy, 58=Drizzle and rain, slight, 59=Drizzle and rain, moderate/heavy, 61=Rain, slight, 63=Rain, moderate, 65=Rain, heavy, 68=Rain/drizzle and snow, slight, 69=Rain/drizzle and snow, moderate/heavy, 71=Snow, slight, 73=Snow, moderate, 75=Snow, heavy, 77=Snow grains, 87=Ice pellets, slight, 88=Ice pellets, moderate/heavy, 89=Hail, slight, 90=Hail, moderate/heavy
synop_4680_1min	1 minute SYNOP code (Table 4680)	code_table="-1=Sensor error, 0=No precipitation, 40=Unknown precipitation, 41=Unknown precipitation, slight/moderate, 42=Unknown precipitation, heavy, 51=Drizzle, slight, 52=Drizzle, moderate, 53=Drizzle, heavy, 57=Drizzle and rain, slight, 58=Drizzle and rain, moderate/heavy, 61=Rain, slight, 62=Rain, moderate, 63=Rain, heavy, 67=Rain/drizzle and snow, slight, 68=Rain/drizzle and snow, moderate/heavy, 71=Snow, slight, 72=Snow, moderate, 73=Snow, heavy, 74=Ice pellets, slight, 75=Ice pellets, moderate, 76=Ice pellets, heavy, 77=Snow grains, 89=Hail, slight
intensity_5min	5 minute mean intensity	mm h^{-1}
intensity_1min	1 minute precipitation intensity	mm h^{-1}
intensity_1min_liquid	1 minute intensity liquid precipitation	mm h^{-1}
intensity_1min_solid	1 minute intensity solid precipitation	mm h^{-1}

accumulation_total	Total precipitation accumulation since last reset	mm
accumulation_daily	Precipitation accumulation since start of day	mm
vis_precip	Visibility in precipitation	m
radar_reflectivity	Radar reflectivity	dBZ
quality	Measuring quality	%
max_hail_diameter	Maximum hail diameter	mm
n_particles	Total number of particles during measurement period	
n_particles_minvel	Number of particles < minimal speed (0.15 m s^{-1})	
n_particles_maxvel	Number of particles > maximal speed (20 m s^{-1})	
n_particles_mindia	Number of particles < minimal diameter (0.15 mm)	
n_particles_no_hydro	Number of particles no hydrometeor	
particle_diameter_bins	Upper and lower limits of particle diameter bins	mm
particle_speed_bins	Upper and lower limits of particle speed bins	m s^{-1}
precipitation_spectrum	Number of particles in each size and speed bin	

Table S7. Variables in the JULES land surface model forcing NetCDF files

variable name	long_name	units
time	time of data point	hours since 1970-01-01 00:00:00Z calendar=standard
temperature (Tair)	air_temperature	K
pressure (PSurf)	air_pressure	Pa
rainfall (Rainf)	rainfall_rate	kg m^{-2} s^{-1}

mean horizontal wind (windspeed)	wind_speed	m^{-1}
specific humidity (Qair)	specific_humidity	kg kg^{-1}
shortwave irradiance (SWdown)	downwelling_shortwave_flux_in_air	W m^{-2}
longwave irradiance (LWdown)	downwelling_longwave_flux_in_air	W m^{-2}

Table S8. Variables in the Halo Doppler lidar NetCDF files.

Table S8.1 *stare, dbs-scans, vad-scans, rhi-scans* and *cross-stare* type files all have similar variables

variable name	**long_name**	**note**	**units**
time	hours since 1970-01-01 00:00:00 UTC	calendar=standard, time at start of wind profile scan cycle	
range	distance to center of range gate	radial distance	m
intensity	SNR + 1	signal-to-noise + 1	
doppler_velocity	radial velocity	positive velocity is away from the lidar	m s^{-1}
backscatter	attenuated backscatter		m^{-1} sr^{-1}
elevation	elevation of measurement path		°
azimuth	azimuth of measurement path		°

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Table S8.2 wind scan variables (derived from all DBS, VAD and RHI scans) within the *windprofiles* type files

variable name	**long_name**	**note**	**units**
time	hours since 1970-01-01 00:00:00 UTC	calendar=standard, time at start of wind profile scan cycle	
height	Height above ground		m
inten_mask	Intensity filter applied to data during processing		
scan_type	Lidar scan type used to derive wind profile		1=DBS, 2=VAD scan (6 point), 3=VAD scan (12 point)
wind_u	Zonal wind component (towards the East)	standard_name=eastward_wind	m s^{-1}
wind_v	Meridional wind component (towards the North)	standard_name=northward_wind	m s^{-1}

wind_w	Vertical wind component (positive upwards)	standard_name=upward_air_velocity,	m s^{-1}
wind_speed	Horizontal wind speed	standard_name=wind_speed	m s^{-1}
wind_direction	Wind direction	standard_name=wind_from_direction	°

Table S9. Variables in the WVR-1100 radiometer NetCDF files

variable name	long_name	units
time	time of data point	hours since 1970-01-01 00:00:00Z calendar=standard
iwv	Integrated water vapour	kg m^{-2}
lwp	Liquid water path	kg m^{-2}
ts23	Brightness temperature at 23.8GHz	K
ts31	Brightness temperature at 31.4GHz	K
tkBB	Blackbody temperature	K
tau23	Optical thickness at 23.8GHz	
tau31	Optical thickness at 31.4GHz	
azim	Azimuth	°
elev	Elevation	°
rain_flag	Rain flag	0=no rain, 1=raining

Table S10. Variables in the TP/WVP-3000 radiometer NetCDF files (combined timeseries and profile data in each daily file)

variable name	long_name	units
time	hours since 1970-01-01 00:00:00Z	time of data point , calendar=standard
iwv	Integrated water vapour	kg m^{-2}
lwp	Liquid water path	kg m^{-2}
air_temp	Air temperature	K
pressure	Air pressure	hPa
rhum	Relative humidity	%
rain	rain_flag	0=no rain, 1=rain

bbtemp	Black body temperature	K
azimuth	Azimuth angle	°
elevation	Elevation angle	°
channel_frequency	channel frequency	GHz
brightness	Brightness temperature	K
level	Height above ground	km
temperature	Temperature profile	K
vapour	Water vapour profile	g m^{-3}
rhprof	Relative humidity profile	%
liquid	Liquid water profile	g m^{-3}

Table S11. Variables in the Humpro radiometer NetCDF files

Table S11.1 humpro timeseries

variable name	long_name	notes	units
time	hours since 1970-01-01 00:00:00 UTC	time of measurement	calendar=standard
elevation	viewing_elevation_angle	-90=blackbody view, 0=horizontal view, 90=zenith view, 180=horizontal view (2nd quadrant)	°
rain_flag	Rain flag	0 = no rain, 1 = raining	
lwp	Liquid water path	retrieval=Neural network	g m^{-2}
iwv	Integrated water vapour	retrieval=Neural network	kg m^{-2}
irt	Infrared sky temperature		°C
brightness	Brightness temperature		K
channel_frequency	Channel centre frequency		GHz
attenuation	Atmospheric attenuation		dB
pressure	Atmospheric pressure	source=Lufft WS600-UMB weather station,height=2.5	hPa
temperature	air temperature	source=Lufft WS600-UMB weather station ,height=2.5	K
humidity	Relative humidity	source=Lufft WS600-UMB weather station ,height=2.5	%

wind_speed	Wind speed	source=Lufft WS600-UMB weather station ,height=2.5	m s^{-1}
wind_dirn	Wind direction	source=Lufft WS600-UMB weather station,height=2.5	°
rain_rate	Rainfall rate	source=Lufft WS600-UMB weather station, height=2.5	mm h^{-1}

Table S11.2 humpro profiles

variable name	long_name	notes	units
time	hours since 1970-01-01 00:00:00 UTC	time of measurement	calendar=standard
rain_flag	Rain flag	0 = no rain, 1 = raining	
altitude	Altitude layers above ground level		m
abs_humidity	Absolute humidity	retrieval=Neural network	g m^{-3}
relative_humidity	Relative humidity	retrieval=Neural network	%

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Table S12. Variables in the LD25 and LD40 ceilometer NetCDF files

variable name	long_name	units
time	time	hours since 1970-01-01 00:00:00Z
backscatter	backscatter	m^{-1} sr^{-1}
cloud_level1	Altitude of first cloud layer detected	m
cloud_level2	Altitude of second cloud layer detected	m
cloud_level3	Altitude of third cloud layer detected	m
cloud_penetration_depth1	Penetration depth of laser beam into first cloud layer	m
cloud_penetration_depth2	Penetration depth of laser beam into second cloud layer	m
cloud_penetration_depth3	Penetration depth of laser beam into	m

	third cloud layer	
max_range_detection	maximum range of detection	m
vert_vis	Vertical visibility	m
height	Height above ceilometer	m
rain	Rain indicator	0 = no rain, 1 = light rain, 2 = moderate rain, 3 = heavy rain

Table S13. Variables in the Radiosonde NetCDF files

variable name	long_name	units
time	time	hours since 1970-01-01 00:00:00Z
time:calendar=standard		
elapsed_time	Elapsed time	s
height	Geopotential height above mean sea level	m
height	altitude	m
air_pressure	Air pressure	hPa
air_temperature	Air temperature	K
relative_humidity	Relative humidity	%
dewpoint	dewpoint	K
mixr	mixing ratio	g kg^{-1}
potential_temperature	Potential temperature	K
wind_speed	wind speed	m s^{-1}
wind_direction	Wind direction	°
wind_north	Northerly wind component	m s^{-1}
wind_east	Easterly wind component	m s^{-1}
latitude	sonde latitude	° north
latitude	latitude	° north
longitude	sonde longitude	° east
longitude	longitude	° east
north	Radiosonde distance north from launch site	m

east	Radiosonde distance east from launch site	m
range	range of balloon from launch site	m
azimuth	bearing of balloon from launch site	°
ptu_status	PTU status flag	
ptu_status	info=0=OK	1=Pressure interpolated, 2=Height interpolated, 4=Temperature interpolated, 8=Humidity interpolated, 16=Telemetry break, 32=Adiabatic check failed, 64=Pressure from height interpolated
wind_interpolation	Wind interpolation flag	0 = not interpolated, 1 = interpolated
ascent_rate	Sonde ascent rate	m s^{-1}
mean_ascent_rate	Mean sonde ascent rate	m s^{-1}
mean_ascent_rate_to_400	Mean sonde ascent rate from surface to 400hPa level	m s^{-1}
mean_ascent_rate_400_to_termination	Mean sonde ascent rate from 400hPa level to termination	m s^{-1}
LCL_T	Temperature at Lifting Condensation Level	K
LCL_P	Pressure at Lifting Condensation Level	hPa
LCL_Z	Height of Lifting Condensation Level	m
LFC_P	Pressure at Level of Free Convection	hPa
LFC_T	Temperature at Level of Free Convection	K
LFC_Z	Height of Level of Free Convection	m
CINH	Convective Inhibition	J kg^{-1}
FreezingLevel	Height of Freezing Level	m
LI	Lifted Index	K
SI	Showalter Stability Index	K
K_index	K Index	K
TT_index	Total totals Index	K
S_index	S Index	K
Ko_index	KO Index	K

CCL_P	Pressure at Convective Condensation Level	hPa
CCL_T	Temperature at Convective Condensation Level	K
CCL_Z	Height of Convective Condensation Level	m
EL_P	Pressure at Equilibrium Level	hPa
EL_T	Temperature at Equilibrium Level	K
EL_Z	Height of Equilibrium Level	m
CAPE	Convective Available Potential Energy	J kg^{-1}

Table S14. Variables in the NCAS radar wind profiler NetCDF files

variable name	long_name	units
time	time (seconds since 1970-01-01 00:00:00)	s
time_in_minutes_since_start_of_day	time_in_minutes_since_start_of_day	minutes
altitude	geometric height above geoid	m
eastward_wind	eastward wind component	m s^{-1}
northward_wind	northward wind component	m s^{-1}
upward_air_velocity	upward air velocity component	m s^{-1}
wind_speed	wind speed	m s^{-1}
wind_from_direction	wind from direction	°
signal_to_noise_ratio_beam_1	signal to noise ratio of beam 1 (back panel)	dB
signal_to_noise_ratio_beam_2	signal to noise ratio of beam 2 (side panel)	dB
signal_to_noise_ratio_beam_3	signal to noise ratio of beam 3 (vertical beam from the central panel)	dB
signal_to_noise_ratio_minimum	minimum signal to noise ratio of the three beams	dB
spectral_width_of_beam_1	spectral width of beam 1 (back panel)	m s^{-1}
spectral_width_ of_ beam_2	spectral width of beam 2 (side panel)	m s^{-1}
spectral_width_ of_ beam_3	spectral width of beam 3 (vertical beam from centre panel)	m s^{-1}

skew_of_beam_1	skew of beam 1 (back panel)	m s^{-1}
skew_of_beam_2	skew of beam 2 (side panel)	m s^{-1}
skew_of_beam_3	skew of beam 3 (vertical beam from centre panel)	m s^{-1}