STATE OF THE CLIMATE IN 2020

RELEVANT DATASETS AND SOURCES

See Chapter 1 (Introduction) for information about the ATOMIC field campaign. Image credit: NOAA/Climate.gov

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8: RELEVANT DATASETS AND SOURCES

General Variable or Phenomenon	Specific dataset or variable	Source	Section
Aerosols	CAMS Reanalysis	https://ads.atmosphere.copernicus.eu/cdsapp#!/dataset/cams-global-radiative-forcing-auxilliary-variables?tab=overview	2g3
	MODIS Aerosol	https://modis.gsfc.nasa.gov/data/dataproduct/mod04.php	2g3
	AATSR	https://earth.esa.int/eogateway/instruments/aatsr	2g3
Air-sea fluxes	CERES Energy Balanced and Filled	https://ceres.larc.nasa.gov/data/	3e4
	CERES FLASHflux	https://ceres.larc.nasa.gov/data/	3e1
	ERA5	https://www.ecmwf.int/en/forecasts/datasets/reanalysis-datasets/era5	6g1
	Woods Hole Oceanographic Institute OAFlux	http://oaflux.whoi.edu	3e1, 3e2, 3e3
Albedo	MODIS	https://doi.org/10.5067/MODIS/MCD43C3.006	2h1
	MODIS (Greenland)	https://doi.org/10.22008/promice/data/modis_greenland_albedo	5e
Biomass, Greenness or Burning	GFAS v1.4	ftp://ftp.mpic.de/GFAS/sc17 (special reprocessing)	2h3
	Global Inventory Modeling and Mapping Studies (GIMMS) 3gv1	https://iridl.ldeo.columbia.edu/SOURCES/.NASA/.ARC/.ECOCAST/.GIMMS/.NDVI3g/.v1p0/index.html?Set-Language=en	5i
	MODIS MCD43A4	https://lpdaac.usgs.gov/products/mcd43a4v006/	5i
	MODIS fire	https://modis.gsfc.nasa.gov/data/dataproduct/mod14.php	5SB.1
	VIIRS SNPP	https://oceancolor.gsfc.nasa.gov/data/viirs-snpp/	5SB.1
Cloud Properties	Aqua MODIS C6	http://dx.doi.org/10.5067/MODIS/MYD08_M3.006	2d7, 2h3
	Terra MODIS C6	http://dx.doi.org/10.5067/MODIS/MOD08_M3.006	2d7
	MODIS 08_L3	https://modis.gsfc.nasa.gov/data/dataproduct/mod08.php	2d7
	CALIPSO	http://www-calipso.larc.nasa.gov	2d7, 6h
	CERES MODIS	https://ceres.larc.nasa.gov/data/general-product-info/	2d7
	CLARA-A2	https://www.cmsaf.eu/EN/Home/home_node.html	2d7
	CLOUD_CCI	www.esa-cloud-cci.org	2d7
	HIRS	https://www.ncei.noaa.gov/access/metadata/landing-page/bin/iso?id=gov.noaa.ncdc:C00951	2d7
	MISR	https://l0dup05.larc.nasa.gov/L3Web/	2d7
	PATMOS-x/AVHRR	www.ncdc.noaa.gov/cdr/atmospheric/avhrr-cloud-properties-patmos-x	2d7
	PATMOS-x/MODIS C6	http://ladsweb.nascom.nasa.gov	2d7
	SatCORPS	No public archive	2d7
Drought	CRU TS 4.05	https://crudata.uea.ac.uk/cru/data/hrg/cru_ts_4.05/	2d11
Land Evaporation	GLEAM	www.gleam.eu/	2d12
FAPAR	MERIS	https://earth.esa.int/eogateway/	2h2
	MODIS-TIP	http://ladsweb.nascom.nasa.gov/	2h2
	SeaWiFS FAPAR	http://fapar.jrc.ec.europa.eu/	2h2
Geopotential Height	ERA5	https://www.ecmwf.int/en/forecasts/datasets/reanalysis-datasets/era5	6b
	NCEP/NCAR Reanalysis 1: Pressure	https://psl.noaa.gov/data/gridded/data.ncep.reanalysis.pressure.html	4d2, 4f2

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Glacier Mass, Area or Volume	GRACE / GRACE-FO	https://grace.jpl.nasa.gov/data/get-data/	5e, 5f, 6e
	World Glacier Monitoring Service	http://dx.doi.org/10.5904/wgms-fog-2020-08	2c3
	Glacier Front Line (Greenland)	https://doi.org/10.22008/promice/data/calving_front_lines	e3
Groundwater and terrestrial water storage	GRACE / GRACE-FO	https://grace.jpl.nasa.gov/data/get-data/	2d9
Humidity, [Near] Surface	ERA5	https://www.ecmwf.int/en/forecasts/datasets/reanalysis-datasets/era5	2d1
	HadISDH	www.metoffice.gov.uk/hadobs/hadisdh	2d1
	MERRA-2	https://gmao.gsfc.nasa.gov/reanalysis/MERRA-2/	2d1
	JRA-55 Atmospheric Reanalysis	http://jra.kishou.go.jp/JRA-55/index_en.html	2d1
Humidity, Upper Atmosphere	ERA5	https://www.ecmwf.int/en/forecasts/datasets/reanalysis-datasets/era5	2d3
	HIRS	www.ncdc.noaa.gov/cdr/fundamental/hirs-ch12-brightness-temperature	2d3
	UTH, Microwave	by email to Viju.John@eumetsat.int	2d3
Ice Sheet Characteristics	DMSP-SSMIS	https://nsidc.org/data/nsidc-0001	6d
	ERA5	https://www.ecmwf.int/en/forecasts/datasets/reanalysis-datasets/era5	6c
	ICESat, ICESat-2	https://icesat-2.gsfc.nasa.gov/	5d2, 6e
	Cryosat-2	https://earth.esa.int/eogateway/missions/cryosat	5d2
	SMOS	https://earth.esa.int/eogateway/missions/smos	5d2
	MERRA-2	https://gmao.gsfc.nasa.gov/reanalysis/MERRA-2/	6c, 6h
	Modèle Atmosphérique Régionale surface mass	https://mar.cnrs.fr/	5e
	PROMICE (Greenland)	https://doi.org/10.22008/promice/data/aws	5e
	DMI Weather Stations	http://polarportal.dk/en/weather/historisk-vejrl#:~:text=DMI%20has%20a%20number%20of,go%20back%20almost%20250%20years.&text=One%20cannot%20expect%20that%20temperature%20observations%20spanning%20centuries%20are%20homogeneous	5e
	ICE_6G_D	https://www.atmosp.physics.utoronto.ca/~peltier/data.php	5e
	Ice Discharge (Greenland)	https://doi.org/10.22008/promice/data/ice_discharge/d/v02	5e
Lake Ice	Global Lake and River Ice Phenology Database, Version 1	https://doi.org/10.7265/N5W66HP8	2c4
	Great Lakes Ice	www.glerl.noaa.gov/data/ice	2c4
	ERA5	https://www.ecmwf.int/en/forecasts/datasets/reanalysis-datasets/era5	2c4

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Lake Temperature	ERA5	https://www.ecmwf.int/en/forecasts/datasets/reanalysis-datasets/era5	2b3
	NERC Globolakes, Copernicus Climate Service	https://cds.climate.copernicus.eu/cdsapp#!/dataset/satellite-lake-water-temperature?tab=overview	2b3
	MetOp A & B ATSR and AVHRR	https://www.eumetsat.int/website/home/Satellites/CurrentSatellites/Metop/index.html	2b3
	Sentinel 3 SLSTR	https://sentinel.esa.int/web/sentinel/user-guides/sentinel-3-slstr/overview	2b3
Lake Water Levels	Hydroweb	http://hydroweb.theia-land.fr/	2b3
Modes of Variability	Arctic Oscillation (AO)	www.cpc.ncep.noaa.gov/products/precip/CWlink/daily_ao_index/teleconnections.shtml	2e1
	Indian Ocean Dipole Mode Index	https://psl.noaa.gov/gcos_wgsp/Timeseries/DMI/	4f, 4h
	Madden-Julian Oscillation (MJO) - Real-time Multivariate MJO	www.bom.gov.au/climate/mjo/graphics/rmm.74toRealtime.txt	4c
	North Atlantic Oscillation (NAO)	https://climatedataguide.ucar.edu/climate-data/hurrell-north-atlantic-oscillation-nao-index-station-based	2e1
	Oceanic Nino Index (ONI)	www.cpc.ncep.noaa.gov/products/analysis_monitoring/ensostuff/ensoyears.shtml	4b
	Southern Annular Mode (SAM)	www.antarctica.ac.uk/met/gjma/sam.html	6b
	Southern Annular Mode (SAM, AAO)	www.cpc.ncep.noaa.gov/products/precip/CWlink/daily_ao_index/aa0/aa0.shtml	2e1
	Multivariate El Nino Index (MEI)	https://psl.noaa.gov/enso/mei/	3i
Rock Glacier Kinematics	Austria: V. Kaufmann and A. Kellerer-Pirklbauer, France: X. Bodin and E. Thibert, Switzerland: R. Delaloye, J. Noetzli and C. Pellet	available from authors upon request	2SB.2
	$f\text{CO}_2$	www.socat.info	3j2
Ocean Carbon	Takahashi LDEO $f\text{CO}_2$	https://www.ncei.noaa.gov/access/ocean-carbon-data-system/oceans/LDEO_Underway_Database/	3j2
	Global Ocean Ship-Based Hydrographic Investigations Program	www.go-ship.org	3j3
	Saildrone	https://data.saildrone.com/	6g3
	SOCOM profiling float	https://socom.princeton.edu/content/data-access	6g3

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Ocean Heat Content	CLIVAR and Carbon Hydrographic Data Office	https://cchdo.ucsd.edu/	3c
	CSIRO/ACE CRC/IMAS-UTAS estimate	www.cmar.csiro.au/sealevel/thermal_expansion_ocean_heat_timeseries.html	3c
	IAP/CAS	https://climatedataguide.ucar.edu/climate-data/ocean-temperature-analysis-and-heat-content-estimate-institute-atmospheric-physics	3c
	PMEL/JPL/JIMAR	http://oceans.pmel.noaa.gov	3c
	MRI/JMA	https://www.data.jma.go.jp/gmd/kaiyou/english/ohc/ohc_data_en.html	3c
	NCEI	https://www.ncei.noaa.gov/access/global-ocean-heat-content/	3c
	UK Met Office EN4.0.2	www.metoffice.gov.uk/hadobs/en4/download-en4-0-2-109.html	3c
	Argo monthly climatology	https://sio-argo.ucsd.edu/RG_Climatology.html	3SB1, 6g2
	Argo	https://usgodae.org/argo/argo.html	3c
Ocean Mass	GRACE	https://grace.jpl.nasa.gov/data/get-data	3f
Ocean Salinity	Aquarius V3.0	http://podaac.jpl.nasa.gov/aquarius	3d2
	Argo	https://usgodae.org/argo/argo.html	3d2
	Blended Analysis for Surface Salinity	ftp://ftp.cpc.ncep.noaa.gov/precip/BASS	3d2
	SMAP	https://podaac.jpl.nasa.gov/SMAP	3d2
	SMOS	https://earth.esa.int/eogateway/missions/smos	3d2
	World Ocean Atlas 2013	www.nodc.noaa.gov/OC5/woa13/	3d2, 3d3
	World Ocean Atlas 2018	https://www.ncei.noaa.gov/products/world-ocean-atlas	2d8
Outgoing Longwave Radiation	NCEI	https://www.ncei.noaa.gov/access/global-ocean-heat-content/	3d3
	AVHRR	https://psl.noaa.gov/data/gridded/data.interp_OLR.html	4d2, 4g2
	Daily OLR	www.ncdc.noaa.gov/cdr/atmospheric/outgoing-longwave-radiation-daily	4b2, 4b3, 4c, 4g3, 4g5, 4g6

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Ozone, Total Column and Stratospheric	GOME/SCIAMACHY/GOME2 (GSG) Merged Total Ozone	http://www.iup.uni-bremen.de/UVSAT/datasets/merged-wfdoas-total-ozone	2g4
	GOME/SCIAMACHY/GOME2 (GTO) Merged Total Ozone	https://atmos.eoc.dlr.de/gto-ecv	2g4
	GOZCARDS ozone profiles	https://gozcards.jpl.nasa.gov	2g4
	Aura OMI/MLS	https://disc.sci.gsfc.nasa.gov/Aura/data-holdings/MLS ftp://toms.gsfc.nasa.gov/pub/omi/data/ozone/ (for years 2013-2017)	5j1, 6h
		https://disc.gsfc.nasa.gov/datasets/OMTO3d_003/summary	
		https://disc.gsfc.nasa.gov/datasets/OMUVBd_003/summary	
	Multi Sensor Reanalysis (MSR-2) of total ozone	http://www.temis.nl/protocols/O3global.html	2g4
	NASA BUV/SBUV v8.6 (MOD v8.6) Merged Ozone	http://acdb-ext.gsfc.nasa.gov/Data_services/merged	2g4
	NOAA BUV/SBUV v8.6 (MOD v8.6) Merged Ozone	ftp://ftp.cpc.ncep.noaa.gov/SBUV_CDR	2g4
	Bodeker Scientific	http://www.bodekerscientific.com/data/total-column-ozone	5j1
	Ozone Mapping & Profiler Suite (OMPS)	https://ozoneaq.gsfc.nasa.gov/omps/	6h
	Ozonesonde	www.esrl.noaa.gov/gmd/dv/spo_oz	6h
	SAGE II/OSIRIS	dataset linked to Bourassa et al. (2018) doi:10.5194/amt-11-489-2018	2g4
	SAGE-SCIA-OMPS	dataset linked to Arosio et al., (2018) doi:10.5194/amt-2018-275	2g4
	SWOOSH	www.esrl.noaa.gov/csd/groups/csd8/swoosh/	2g4
	WOUDC Ground-based Ozone	ftp://tor.ec.gc.ca cd/pub/woudc/Projects/Campaigns/ZonalMeans	2g4
Ozone, Tropospheric	Aura OMI/MLS	http://acd-ext.gsfc.nasa.gov/Data_services/cloud_slice/new_data.html	2g6
	NOAA Observatory Data	ftp://aftp.cmdl.noaa.gov/data/ozwv/SurfaceOzone/	2g6
Permafrost	Active Layer Thickness	www2.gwu.edu/~calm/	2c1, 5h2
	GTN-P global mean annual ground temperature data for permafrost	https://doi.org/10.1594/PANGAEA.884711	2c1
	Global Terrestrial Network for Permafrost (GTN-P)	http://gtnpdatabase.org/	2c1, 5h1
	Permafrost Temperature	http://permafrost.gi.alaska.edu/sites_map	5h1
	Permafrost Temperature at Chinese (QTP) sites	https://nsidc.org/data/GGD700/versions/1	2c1
	Permafrost Temperature at French sites	permafrance.osug.fr	2c1
	Permafrost Temperature at Norwegian sites	www.tspnorway.com	2c1
	Permafrost Temperature at Swiss sites (PERMOS)	www.permos.ch	2c1

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Phenology	NDVI	https://modis.gsfc.nasa.gov/data/dataproduct/mod13.php	2h4
	PhenoCam	http://phenocam.sr.unh.edu	2h4
	Harvard Forest	https://harvardforest1.fas.harvard.edu/exist/apps/datasets/showData.html?id=hf003	2h4
	Natures Calendar	https://naturescalendar.woodlandtrust.org.uk/	2h4
Vegetation Optical Depth	VODCA	https://zenodo.org/record/2575599	2SB.3
	ESA CCI Biomass	https://catalogue.ceda.ac.uk/uuid/bedc59f37c9545c981a839eb552e4084	2SB.3
	MODIS MOD15A2H LAI	https://earthexplorer.usgs.gov/	2SB.3
Phytoplankton, Ocean Color	MODIS-Aqua	https://oceancolor.gsfc.nasa.gov/data/aqua/	3i
	SeaWiFS	https://oceancolor.gsfc.nasa.gov/data/seawifs/	3i
Precipitation	Climate Extremes Index	https://www.ncdc.noaa.gov/extremes/cei/	2d5
	CMORPH	www.cpc.ncep.noaa.gov/products/janowiak/cmorph_description.html	4d1
	ERA5	https://www.ecmwf.int/en/forecasts/datasets/reanalysis-datasets/era5	2d5
	GHCN v4	www.ncdc.noaa.gov/temp-and-precip/gchn-gridded-products/precipitation	2d5
	GHCNDEX	www.climdex.org/datasets.html	2d5
	GPCP v2.3	https://psl.noaa.gov/data/gridded/data.gpcp.html	3e2, 4e, 4f, 4h
	GPCC	www.dwd.de/EN/ourservices/gpcc/gpcc.html	2d5
	MERRA-2	http://gmao.gsfc.nasa.gov/reanalysis/MERRA-2/	2d5
Pressure, Sea Level or Near-Surface	European Climate & Assessment & Dataset	https://www.ecad.eu/	2d5
	ERA5	https://www.ecmwf.int/en/forecasts/datasets/reanalysis-datasets/era5	5b2, 6b, 6SB.1
	HadSLP2r	http://hadobs.metoffice.com/hadslp2/	2e1
	NCEP/NCAR Reanalysis	www.esrl.noaa.gov/psd/data/gridded/data.ncep.reanalysis.html	4f2
River Discharge	ERA5	https://www.ecmwf.int/en/forecasts/datasets/reanalysis-datasets/era5	5f
	CaMA Flood	http://hydro.iis.u-tokyo.ac.jp/~yamada/cama-flood/	
	ELSE	offline	
Sea Ice Age	DDM30	https://www.uni-frankfurt.de/45218101/DDM30	
	EASE-Grid v3	http://nsidc.org/data/nsidc-0611/	5d3
Sea Ice Duration	Near-Real-Time DMSP SSM/I-SSMIS Daily Polar Gridded	http://nsidc.org/data/nsidc-0081.html	5d3, 6f
	Nimbus-7 SMMR and DMSP SSM/I (Bootstrap)	http://nsidc.org/data/nsidc-0079.html	6f

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Sea Ice Extent / Area / Concentration	Nimbus-7 SMMR and DMSP SSM/I (Bootstrap)	http://nsidc.org/data/seaice_index/	5c, 5d1, SB6.2
	Nimbus-7 SMMR Sea Ice Concentration	https://nsidc.org/data/nsidc-0007	6d
	NSIDC Passive Microwave Sea Ice Concentration	https://nsidc.org/data/G02202	5c
	Passive Microwave melt data (Greenland)	https://nsidc.org/greenland-today/	5e
	NSIDC Sea Ice Extent	https://nsidc.org/data/g02135	5c, 5d1
	OSI SAF CCI : OSI-401-b	http://osisaf.met.no/p/ice/ice_conc_reprocessed.html	5d1
	GRACE technical notes T13, T14	TN-13: https://podaac-tools.jpl.nasa.gov/drive/files/allData/gracefo/docs/TN-13_GEOC_JPL_RL06.txt TN-14: https://podaac-tools.jpl.nasa.gov/drive/files/allData/gracefo/docs/TN-14_C30_C20_GSFC_SLR.txt	5e
	AMSR-E	https://soccom.princeton.edu/content/data-access	6g3
Sea Level / Sea Surface Height	GRACE / GRACE-FO	https://grace.jpl.nasa.gov/data/get-data/	3f
	NOAA/NESDIS/STAR	www.star.nesdis.noaa.gov/sod/lisa/SeaLevelRise/LSA_SLR_timeseries.php	3f
	CMEMS	http://marine.copernicus.eu/services-portfolio/access-to-products/?option=com_csw&view=details&product_id=SEALEVEL_GLO_PHY_L4_NRT_OBSERVATIONS_008_046	3f
	Argo	https://usgodae.org/argo/argo.html	3f
	Tide Gauge	http://uhslc.soest.hawaii.edu/	3f
	AVISO	https://www.aviso.altimetry.fr/en/data.html	3g, 3h
ocean currents	AOML climate indices	https://www.aoml.noaa.gov/phod/indexes/index.php	3g
	Ocean Surface Current Analysis - Real time (OSCAR)	https://podaac.jpl.nasa.gov/dataset/OSCAR_L4_OC_third-deg	3g
	Global Drifter Program	https://www.aoml.noaa.gov/phod/gdp/	3g
	Atlantic Ship of Opportunity XBT	https://www.aoml.noaa.gov/phod/goos/xbt_network/	3h
	RAPID array	https://rapid.ac.uk/rapidmoc/	3h
	MOVE array	http://www.oceansites.org/tma/move.html	3h
	OSNAP	https://www.o-snap.org/	3h
	SAMBA	http://www.oceansites.org/tma/samba.html	3h
	Florida Current transport	https://www.aoml.noaa.gov/phod/floridacurrent/data_access.php	3h
Sea Surface Temperature	ERSSTv5	https://doi.org/10.7289/V5T72FNM	3b, 4b, 4e, 4g2
	HadSST3.1.1	www.metoffice.gov.uk/hadobs/hadsst3	3b, 4e
	HadSST4	https://www.metoffice.gov.uk/hadobs/hadsst4/	2SB.1, 3b
	NOAA Optimum Interpolation SST (OISST) v2	http://apdrc.soest.hawaii.edu/dods/public_data/NOAA_SST/OISST/monthly	4b1, 4d2, 4f
	NOAA Optimum Interpolation SST (OISST) v2	https://www.ncdc.noaa.gov/oisst	2b3, 3b, 4g3, 4g5, 4g6, 4h, 5c

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Snow Properties	Canadian Meteorological Centre Daily Snow Depth Analysis v1	https://nsidc.org/data/NSIDC-0447	5f
	Crocus Snowpack Model	http://www.umr-cnrm.fr/spip.php?article265	5f
	GlobSnow 2	https://nsidc.org/data/NSIDC-0595/versions/2	5f
	NOAA Interactive Multi-sensor Snow and Ice Mapping System (Snow Cover Duration)	https://usicecenter.gov/Products/lmsHome	5f
	NOAA Snow Chart Data Record (Snow Cover Extent)	www.snowcover.org	2c2, 5f
	Northern Hemisphere (NH) Snow Cover Extent (SCE), Version 1	doi:10.7289/V5N014G9	2c2, 5f
	MERRA-2	http://gmao.gsfc.nasa.gov/reanalysis/MERRA-2/	5f
Soil Moisture	ESA CCI SM	www.esa-soilmoisture-cci.org/index.php	2d10
Temperature, [Near] Surface	Antarctic Meteorological Research Center (AMRC) AWS	http://amrc.ssec.wisc.edu/data	6b
	CRUTEM4	www.metoffice.gov.uk/hadobs/crutem4	5b1
	ERA5	https://www.ecmwf.int/en/forecasts/datasets/reanalysis-datasets/era5	2b1, 2b3, 2SB.1, 5SB.1, 6b
	GHCNDEX	www.climdex.org/	2b3
	HadCRUT5 Global Temperature	https://www.metoffice.gov.uk/hadobs/hadcrut5/	2b1
	JRA-55 Atmospheric Reanalysis	http://jra.kishou.go.jp/JRA-55/index_en.html	2b1, 4f
	MERRA-2	http://gmao.gsfc.nasa.gov/reanalysis/MERRA-2/	2b3
	MERRA-2 monthly	https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2TMNXLND.5.12.4	2h4
	NASA/GISS Global Temperature	https://data.giss.nasa.gov/gistemp/	2b1
	NCEP/NCAR Reanalysis	https://psl.noaa.gov/data/gridded/data.ncep.reanalysis.html	5b2, 5f
	ERA-Interim	www.ecmwf.int/en/research/climate-reanalysis/era-interim	5f
	NOAA/NCEI NOAAGlobalTemp	www.ncdc.noaa.gov/data-access/marineocean-data/noaa-global-surface-temperature-noaaglobaltemp	2b1

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Temperature, Upper Atmosphere	ERA5	https://www.ecmwf.int/en/forecasts/datasets/reanalysis-datasets/era5	2b4, 2b5, 6b, 6h
	JRA-55 Atmospheric Reanalysis	http://jra.kishou.go.jp/JRA-55/index_en.html	2b4, 2b5
	MERRA-2	http://gmao.gsfc.nasa.gov/reanalysis/MERRA-2/	2b4, 2b5, 6h
	NOAA merged SSU+AMSU satellite data	https://www.star.nesdis.noaa.gov/smcd/emb/mscat/index.php	2b5
	RAOBCORE, RICH	www.univie.ac.at/theoret-met/research/raobcore (get version 1.7 fro Leo Haimberger)	2b4,2b5
	RATPAC A2	www.ncdc.noaa.gov/data-access/weather-balloon/radiosonde-atmospheric-temperature-products-accessing-climate/ratpac-a	2b4
	RSS v4.0	www.remss.com	2b4, 2b5
	NOAA/NESDIS/STAR MSU v4.1	ftp://ftp.star.nesdis.noaa.gov/pub/smcd/emb/mscat/data/MSU_AMSU_v4.1	2b4
	UW MSU v1.0	https://pochedls.github.io/#!data.md	2b4
	UAH MSU v6.0	https://www.nsstc.uah.edu/public/msu/	2b4, 2b5
	NCAR merged SSU+MLS satellite data	ftp://ftp.acom.ucar.edu/user/randel/SSUdata	2b5
	Stratospheric QBO data	https://acd-ext.gsfc.nasa.gov/Data_services/met/qbo/qbo.html	2b5
	CLASSmat	https://catalogue.ceda.ac.uk/uuid/9058edd550624de69a8b2a882d11b65c	2SB.1
TOA Earth Radiation Budget	UAHNMAT	https://www.nsstc.uah.edu/climate/	2SB.1
	CERES EBAF Ed4.1	https://ceres-tool.larc.nasa.gov/ord-tool/jsp/EBAF41Selection.jsp	2f1
Solar Transmission, Apparent	TSIS TIM Level 3 Total Solar Irradiance 24-hour Means	doi:10.5067/TSIS/TIM/DATA306	2f1
	Mauna Loa Observatory	https://www.esrl.noaa.gov/gmd/webdata/grad/mloapt/mauna_loa_transmission.dat	2f2
Trace Gases	Atmospheric Greenhouse Gas Index (AGGI)	www.esrl.noaa.gov/gmd/aggi	2g1
	Atmospheric Gas trends	www.esrl.noaa.gov/gmd/ccgg/trends	2g1
	CAMS Reanalysis (Carbon Monoxide)	https://ads.atmosphere.copernicus.eu/cdsapp#!/dataset/cams-global-radiative-forcing-auxilliary-variables?tab=overview	2g7
	Nitrous Oxide	www.esrl.noaa.gov/gmd/hats/combined/N2O.html	2g1
	Ozone-Depleting Gas Index (ODGI)	www.esrl.noaa.gov/gmd/odgi	2g2
Tropical Cyclone Data	HURDAT2	www.aoml.noaa.gov/hrd/hurdat/Data_Storm.html	4g2
	International Best Track Archive for Climate Stewardship (IBTrACS)	www.ncdc.noaa.gov/ibtracs/	4g1, 4g3, 4g5, 4g6, 4g7
	JTWC Best-track Dataset	https://www.metoc.navy.mil/jtwc/jtwc.html?best-tracks	4g4,4g5
	RSMC-Tokyo, JMA best-track data	www.jma.go.jp/jma/jma-eng/jma-center/rsmc-hp-pub-eg/besttrack.html	4g4
	Southwest Pacific Enhanced Archive of Tropical Cyclones (SPEARtc)	http://apdrc.soest.hawaii.edu/projects/speartc	4g8
	HURDAT US Hurricanes	http://www.aoml.noaa.gov/hrd/hurdat/All_U.S._Hurricanes.html	4SB.1

General Variable or Phenomenon	Specific dataset or variable	Source	Section
UV Radiation Data	Canadian sites	ftp://exp-studies.tor.ec.gc.ca/pub/uvdata/Preliminary/MSC	5j2
	Greenland site	http://uv.biospherical.com/Version2/data.asp	5j2
	Norwegian sites	https://github.com/uvnrpa/Minute_Data	5j2
	OMI	https://disc.gsfc.nasa.gov/datasets?page=1&source=AURA%20OMI	5j2
	NASA Aura Microwave Limb Sounder	https://mls.jpl.nasa.gov/products/h2o_product.php	2g5
Water Vapor, Total Column	COSMIC	https://cdaac-www.cosmic.ucar.edu/	2d2
	ERA5	https://www.ecmwf.int/en/forecasts/datasets/reanalysis-datasets/era5	2d2, 6SB.1
	GNSS Ground-Based Total Column Water Vapor	https://doi.org/10.25326/18	2d2
	JRA-55 Atmospheric Reanalysis	http://jra.kishou.go.jp/JRA-55/index_en.html	2d2
	METOP A B C	https://www.eumetsat.int/our-satellites/metop-series	2d2
	RSS SSM/I - AMSR-E Ocean Total Column Water Vapor	www.remss.com	2d2
Wind, [Near] Surface	ERA5	https://www.ecmwf.int/en/forecasts/datasets/reanalysis-datasets/era5	2e2, 4g4
	HadISD3.1.1	www.metoffice.gov.uk/hadobs/hadisd/	2e2
	JRA-55 Atmospheric Reanalysis	http://jra.kishou.go.jp/JRA-55/index_en.html	4h
	MERRA-2	http://gmao.gsfc.nasa.gov/reanalysis/MERRA-2/	2e2
	RSS Radiometer winds	www.remss.com/measurements/wind	2e2
Wind, Upper Atmosphere	Climate Forecast System Reanalysis	www.ncdc.noaa.gov/data-access/model-data/model-datasets/climate-forecast-system-version2-cfsv2	4g3, 4g5, 4g6
	ERA5	https://www.ecmwf.int/en/forecasts/datasets/reanalysis-datasets/era5	2e3, 4e, 6b
	ERA-Interim	www.ecmwf.int/en/research/climate-reanalysis/era-interim	2e3
	JRA-55 Atmospheric Reanalysis	http://jra.kishou.go.jp/JRA-55/index_en.html	2e3
	MERRA-2	http://gmao.gsfc.nasa.gov/reanalysis/MERRA-2/	2 e3
	NCEP/NCAR Reanalysis	https://psl.noaa.gov/data/gridded/data.ncep.reanalysis.html	4b2, 4b3, 4c, 4g2, 4g3
	QBO	https://www.geo.fu-berlin.de/met/ag/strat/produkte/qbo/index.html	2 e3