

# List of abbreviations

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1,25(OH)2D	1,25-Dihydroxyvitamin D	HFC	Hydrofluorocarbon. Long-term replacements for CFCs, with zero ozone depletion potential
25(OH)D	25-Hydroxyvitamin D	Hg	Mercury (Hg(0)aq and Hg(II) being different oxidation states)
AK	Actinic keratosis	HIV	Human immunodeficiency virus
AO	Arctic oscillation. A large-scale variation in Arctic wind patterns	HPV	Human papillomavirus
APase	Alkaline phosphatase	HSV	Herpes simplex virus
APC	Antigen presenting cell	HY5	Transcription factor HY5, which is a key downstream effector of the UVR8 (UV-regulatory protein) pathway
ASL	Above sea level	IBD	Inflammatory bowel disease
BCC	Basal cell carcinoma(s)	IL	Interleukin
Br	Bromine (an ozone depleting chemical)	Ink4a	Murine inhibitor of kinase 4a protein (gene in italics)
BrO	Bromine monoxide	IPCC	Intergovernmental Panel on Climate Change
BSWF	Biological spectral weighting functions	IPF	Immune protection factor
BWF	Biological weighting function	kda	Kilodalton
CAS	Chemical Abstracts Service	KNMI	Dutch National Institute for Weather, Climate and Seismology (The Netherlands)
CC	Cortical cataract(s)	L•	Lipid radical
CDFA	Chlorodifluoroacetic acid	MAA	Mycosporine-like amino acids
CDK	Climatic droplet keratopathy	Mb	Megabase, equal to 1 million base pairs
CDOC	Colored dissolved organic carbon	MC1R	Melanocortin 1 receptor
CDOM	Colored (or chromophoric) dissolved organic matter	MHC	Major histocompatibility complex
CPD	Cyclobutane pyrimidine dimer	MS	Multiple sclerosis
CFC	Chlorofluorocarbon. Ozone-damaging chemical (e.g., CFC1 <sub>2</sub> : dichlorodifluoromethane. CCl <sub>2</sub> F <sub>2</sub> ), now controlled under the Montreal Protocol	N <sub>2</sub> O	Nitrous oxide (a greenhouse gas that is also a source of NO <sub>2</sub> )
CH	Contact hypersensitivity	NAO	North Atlantic Oscillation. A large-scale variation and redistribution of atmospheric mass in the Atlantic region producing large changes in the NH dynamics
CH <sub>4</sub>	Methane (a greenhouse gas)	NASA	National Aeronautic and Space Administration (USA)
CIE	Commission Internationale de l'Eclairage (International Commission on Illumination)	NaTFA	Sodium trifluoroacetate
Cl	Chlorine (an ozone depleting chemical)	NC	Nuclear cataract(s)
CM	Cutaneous melanoma	NCAR	National Centre for Atmospheric Research (USA)
CO	Carbon monoxide	NH	Northern Hemisphere
CO <sub>2</sub>	Carbon dioxide (a greenhouse gas)	NIMBUS-7	A NASA satellite
COS	Carbonyl sulfide	NIVR	Netherlands Agency for Aerospace Programmes
CPD	Cyclobutane pyrimidine dimer	NMHCs	Non-methane hydrocarbons
Cu	Copper (Cu(I) and Cu(II) being different oxidation states)	NMSC	Non-melanoma skin cancer
DIC	Dissolved inorganic carbon	NO	Nitric oxide (an ozone depleting gas)
DMS	Dimethylsulfide	NO <sub>2</sub>	Nitrogen dioxide (an ozone depleting gas)
DMSP	Dimethylsulfoniopropionate	NOAA	National Oceanic and Atmospheric Administration (USA)
DNA	Deoxyribonucleic acid	NOEC	No observed effect concentration
DOC	Dissolved organic carbon	NOx	Nitrogen oxides
DOM	Dissolved organic matter	O <sub>3</sub>	Ozone
DON	Dissolved organic nitrogen	ODS	Ozone depleting substance(s)
DSB	Double strand break	•OH	Hydroxyl radical (and important atmospheric cleaning agent)
DTH	Delayed type hypersensitivity	OMI	Ozone monitoring instrument (on board the Aura satellite)
DU	Dobson Unit (used for the measurement of total column ozone (1 DU = 2.69 × 10 <sup>16</sup> molecules cm <sup>-2</sup> ))	OTR	Organ transplant recipients
EAE	Experimental allergic encephalitis	P	Phosphorous
EDUCE	European Database for Ultraviolet Radiation Climatology and Evaluation	PAH	Polycyclic aromatic hydrocarbon(s)
EESC	Equivalent Effective Stratospheric Chlorine	PAM	Pulse amplitude modulated (fluorescence)
ENSO	El Niño Southern Oscillation. A large-scale climate variability in the Pacific region	PAR	Photosynthetically active radiation, 400–700 nm waveband
EP	Earth Probe (a NASA satellite)	PAUR II	Photochemical activity and solar ultraviolet radiation campaign 2
EPA	Environmental Protection Agency	pCO <sub>2</sub>	Partial pressure of carbon dioxide
EV	Epidermodysplasia verruciformis	PEC	Predicted environmental concentration
Fe	Iron (Fe(II) and Fe(III) being different oxidation states)	Pg	Peta gram (1 × 10 <sup>12</sup> grams)
FMI	Finnish Meteorological Institute	PHR1	The gene encoding CPD photolyase
GHG	Greenhouse gas	PNEC	Predicted no effect concentration
Glu I	A pathogenesis-related (PR) protein		
HALS	Hindered amine light stabilizer		
HCFC	Hydrochlorofluorocarbon. Interim replacements for CFCs with small ozone depletion potential (e.g., R22: chlorodifluoromethane CHClF <sub>2</sub> ) to be phased out		

POC	Particulate organic carbon	Treg cell	T-regulatory cell
POM	Particulate organic matter	Troposphere	Lowest part of the Earth's atmosphere (0–16 km)
PR	Pathogenesis-related proteins	UCA	Urocanic acid
PSC	Posterior subcapsular cataract(s)	UV	Ultraviolet. Wavelengths from 100 nm to 400 nm. Ozone and other atmospheric gases progressively absorb more and more of the radiation at wavelengths less than 320 nm. Only those greater than 290 nm are transmitted to the Earth's surface
PSC	Polar stratospheric cloud (ice crystals which form at high altitudes in Polar regions when the temperature is below a critical threshold)		
Ptc	Murine patch protein (gene in italics)	UV-A	Electromagnetic radiation of wavelengths in the 315 to 400 nm range
PTCH	Human patch protein (gene in italics)	UV-B	Electromagnetic radiation of wavelengths in the 280 to 315 nm range
QBO	Quasi biennial oscillation (a shift in wind patterns—especially over the tropics—with a period of approximately 2.2 years)	UV-C	Electromagnetic radiation of wavelengths in the 100 to 280 nm range
RA	Rheumatoid arthritis	UVery	Erythemally-weighted UV irradiance, where the irradiance is weighted by the erythemal action spectrum
RAF	Radiation amplification factor (a measure of sensitivity to ozone change)	UVI	UV index, a standard scale for reporting UV irradiance to the public. The UVI is a unitless number which is 40 times the erythemally-weighted irradiance, measured in units of $W m^{-2}$
ROS	Reactive oxygen species (•OH, for example)		
RT	Radiative transfer		
SAGE	Stratospheric aerosol and gas experiment, a satellite-based instrument	UVR8	UV-regulatory protein
SCC	Squamous cell carcinoma	VDR	Vitamin d receptor
SH	Southern Hemisphere	VOC	Volatile organic compound(s)
SZA	Solar zenith angle ( <i>i.e.</i> the angle between zenith and the centre of the solar disk)	WMO	World Meteorological Organization
TFA	Trifluoroacetic acid	WOUDC	World Ozone and UV Data Centre
Th1	T-helper 1	XP	Xeroderma pigmentosum
Th2	T-helper 2		
TOMS	Total ozone mapping spectrometer, a satellite-based instrument		