README: START08 merged AWAS data file

Documentation updated 24 April 2013: Shawn Honomichl, Laura Pan

For Campaign information, visit NCAR ACD START08 Page: http://www.acd.ucar.edu/start/

This NetCDF dataset contains variables from the Advanced Whole Air Sampler (AWAS), selected in situ chemical tracer measurement from other START08 chemical payload, selected variables from the NCAR Gulfstream V (GV) aircraft, and large-scale meteorological variables interpolated in space and time from high-resolution NCEP Global Forecast System (GFS) 6-hourly global analyses.

Data files contain up to 60 samples because the AWAS instrument has total of 60 canisters per flight. Selected higher rate data from other GV instruments are included to facilitate data analyses. Merging of aircraft data and higher sampling rate chemical tracer data with the AWAS data is done by averaging all the 1-second data points falling within the start/end time of each AWAS sample (interval of canister opening to closing, ~ 30 s). Associated standard deviations for each merged aircraft variable are also included to indicate the variance of merged aircraft data within each interval. GFS data is interpolated to 1-second data and averaged over the AWAS start/end time in the same fashion. Standard deviations are included for these variables as well.

Files also include a number of derived quantities, such as equivalent latitude, potential temperature lapse rate (stability), temperature at the tropopause, etc. The equivalent latitude suffers from ambiguities when the isentropic surface of interest intersects the ground. Therefore, the eqlat_GFS variable has attributes listing the theta surfaces on which it was computed and the amount of missing data on each surface. This can be used as a measure of the reliability of the equivalent latitude.

For more information on the AWAS and other in situ chemical data, see the payload 2-pagers of each instrument at: http://www.acd.ucar.edu/start/instruments.shtml.

Additionally, each specific AWAS variable (in long name format) and its associated atmospheric lifetime and source(s) is listed in the Table on the following page. An ncdump of a sample merge file is also given on the pages following the table that lists every variable in the merged AWAS netcdf files.

For further information on these files, please contact:

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Table 1. **Selected compounds to be measured from the HAIS AWAS during START08, approximate atmospheric lifetimes (yrs), and predominant source (N=natural; A=anthropogenic).**

	Yrs	Source		Yrs	Source
Chlorofluorocarbons			**Organic Nitrates**		
CFC-11 (CCl_3F)	50	A	Methyl nitrate(CH_3ONO_2)	0.08	A/N
CFC-12 (CCl_2F_2)	102	A	Ethyl nitrate($C_2H_5ONO_2$)	0.04	A/N
CFC-113 (CCl_2FCClF_2)	85	A	Propyl nitrates($C_3H_7ONO_2$)	0.03	A/N
CFC-114 ($CClF_2CClF_2$)	300	A	Butyl nitrates ($C_4H_9ONO_2$)	0.02	A
CFC-115 (CF_2ClCF_3)	1700	A	**Non-Methane Hydrocarbons**		
Halons			Ethane (C_2H_6)	0.2	A
CFC-12b1 (Halon 1211,CF_2ClBr)	20	A	Ethyne (C_2H_4)	0.06	A
CFC-13b1 (Halon 1301, CF_3Br)	65	A	Propane(C_3H_8)	0.04	A
CFC-114b2 (Halon 2402, $C_2F_4Br_2$)	20	A	Isobutane(C_4H_{10})	0.02	A
Hydrochlorofluorocarbons/ Hydrofluorocarbons			n-Butane (C_4H_{10})	0.02	A
HCFC-22 (CHF_2Cl)	13	A	Isopentane (C_5H_{12})	0.01	A
HCFC-141b (CH_3CFCl_2)	9.4	A	n-Pentane (C_5H_{12})	0.01	A
HCFC-142b (CH_3CF_2Cl)	19.5	A	Isoprene (C_5H_{10})	hrs	N
HFC-134a ($C_2H_2F_4$)	14	A	Benzene (C_6H_6)	0.04	A
HFC-152a ($F_2HC\text{-}CH_3$)	1.5	A	Toluene (C_7H_8)	0.01	A
HCFC-124 (C_2HF_4Cl)	5.9	A	**Methyl Halides and related**		
HCFC-21 ($CHFCl_2$)	2	A	Methyl Bromide(CH_3Br)	0.8	A/N
Others (TBD)			Methyl Chloride (CH_3Cl)	1.5	N
			Methyl Iodide (CH_3I)	0.01	N
Solvents			Methylene Bromide(CH_2Br_2)	0.4	N
Carbon Tetrachloride (CCl_4)	40	A	CHxBryClz	0.1	N
Methyl Chloroform(CH_3CCl_3)	4.8	A	Bromoform ($CHBr_3$)	0.1	N
Tetrachloroethylene (C_2Cl_4)	0.3	A	**Other**		
Methylene Chloride (CH_2Cl_2)	0.3	A	Methane (CH_4)	9	A/N
Chloroform ($CHCl_3$)	0.4	A	Carbon Monoxide (CO)	0.4	A/N
Trichloroethylene(C_2HCl_3)	0.02	A	Nitrous Oxide (N_2O)	115	N
1,2 Dichloroethane ($C_2H_4Cl_2$)	0.25	A	Carbonyl Sulfide (COS)	30	N/A
			Dimethyl Sulfide (C_2H_6S)	<.01	N

```
netcdf start08_rf01_AWAS_merged_final_v03 {
dimensions:
      Time = UNLIMITED ; // (59 currently)
variables:
      float UTMID(Time) ;
            UTMID:UTC_time = "seconds from midnight" ;
            UTMID:FillValue = NaNf ;
            UTMID:units = "sec" ;
            UTMID:long_name = "UTMID" ;
      float UTSTART(Time) ;
            UTSTART:UTC_time = "seconds from midnight" ;
            UTSTART:FillValue = NaNf ;
            UTSTART:units = "sec" ;
            UTSTART:long_name = "UTSTART" ;
      float UTSTOP(Time) ;
            UTSTOP:UTC_time = "seconds from midnight" ;
            UTSTOP:FillValue = NaNf ;
            UTSTOP:units = "sec" ;
            UTSTOP:long_name = "UTSTOP" ;
      float LONC(Time) ;
            LONC:FillValue = NaNf ;
            LONC:units = "degree_E" ;
            LONC:long_name = "GPS-Corrected Inertial Longitude" ;
            LONC:valid_range = -180.f, 180.f ;
            LONC:Category = "Position" ;
            LONC:standard_name = "longitude" ;
            LONC:DataQuality = "Good" ;
            LONC:Dependencies = "1 LATC" ;
            LONC:coordinate_system = "WGS84" ;
            LONC:description = "averaged over AWAS sample period" ;
      float stddv_LONC(Time) ;
            stddv_LONC:FillValue = NaNf ;
            stddv_LONC:long_name = "LONC standard_deviation over AWAS sample
period" ;
            stddv_LONC:units = "degree_E" ;
      float LATC(Time) ;
            LATC:FillValue = NaNf ;
            LATC:units = "degree_N" ;
            LATC:long_name = "GPS-Corrected Inertial Latitude" ;
            LATC:valid_range = -90.f, 90.f ;
            LATC:Category = "Position" ;
            LATC:standard_name = "latitude" ;
            LATC:DataQuality = "Good" ;
            LATC:Dependencies = "11 LAT LON GGLAT GGLON VNS VEW GGVNS GGVEW ROLL
GGNSAT GGSTATUS" ;
            LATC:coordinate_system = "WGS84" ;
            LATC:description = "averaged over AWAS sample period" ;
      float stddv_LATC(Time) ;
            stddv_LATC:FillValue = NaNf ;
            stddv_LATC:long_name = "LATC standard_deviation over AWAS sample
period" ;
            stddv_LATC:units = "degree_N" ;
      float GGALT(Time) ;
            GGALT:FillValue = NaNf ;
            GGALT:units = "m" ;
```

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            GGALT:long_name = "Reference GPS Altitude (MSL)" ;
            GGALT:Category = "Position" ;
            GGALT:standard_name = "altitude" ;
            GGALT:SampledRate = 1 ;
            GGALT:DataQuality = "Good" ;
            GGALT:description = "averaged over AWAS sample period" ;
      float stddv_GGALT(Time) ;
            stddv_GGALT:FillValue = NaNf ;
            stddv_GGALT:long_name = "GGALT standard_deviation over AWAS sample
period" ;
            stddv_GGALT:units = "m" ;
      float PSXC(Time) ;
            PSXC:FillValue = NaNf ;
            PSXC:units = "hPa" ;
            PSXC:long_name = "Corrected Static Pressure, Reference" ;
            PSXC:Category = "Atmos. State" ;
            PSXC:standard_name = "air_pressure" ;
            PSXC:DataQuality = "Good" ;
            PSXC:description = "averaged over AWAS sample period" ;
      float stddv_PSXC(Time) ;
            stddv_PSXC:FillValue = NaNf ;
            stddv_PSXC:long_name = "PSXC standard_deviation over AWAS sample
period" ;
            stddv_PSXC:units = "hPa" ;
      float PALT(Time) ;
            PALT:FillValue = NaNf ;
            PALT:units = "m" ;
            PALT:long_name = "NACA Pressure Altitude" ;
            PALT:Category = "Position" ;
            PALT:standard_name = "altitude" ;
            PALT:DataQuality = "Good" ;
            PALT:description = "averaged over AWAS sample period" ;
      float stddv_PALT(Time) ;
            stddv_PALT:FillValue = NaNf ;
            stddv_PALT:long_name = "PALT standard_deviation over AWAS sample
period" ;
            stddv_PALT:units = "m" ;
      float PALTF(Time) ;
            PALTF:FillValue = NaNf ;
            PALTF:units = "feet" ;
            PALTF:long_name = "NACA Pressure Altitude" ;
            PALTF:Category = "Position" ;
            PALTF:standard_name = "altitude" ;
            PALTF:DataQuality = "Good" ;
            PALTF:description = "averaged over AWAS sample period" ;
      float stddv_PALTF(Time) ;
            stddv_PALTF:FillValue = NaNf ;
            stddv_PALTF:long_name = "PALTF standard_deviation over AWAS sample
period" ;
            stddv_PALTF:units = "feet" ;
      float UIC(Time) ;
            UIC:FillValue = NaNf ;
            UIC:units = "m/s" ;
            UIC:long_name = "GPS-Corrected Wind Vector, East Component" ;
            UIC:Category = "Wind" ;
```

```
            UIC:standard_name = "eastward_wind" ;
            UIC:DataQuality = "Good" ;
            UIC:description = "averaged over AWAS sample period" ;
      float stddv_UIC(Time) ;
            stddv_UIC:FillValue = NaNf ;
            stddv_UIC:long_name = "UIC standard_deviation over AWAS sample
period" ;
            stddv_UIC:units = "m/s" ;
      float VIC(Time) ;
            VIC:FillValue = NaNf ;
            VIC:units = "m/s" ;
            VIC:long_name = "GPS-Corrected Wind Vector, North Component" ;
            VIC:Category = "Wind" ;
            VIC:standard_name = "northward_wind" ;
            VIC:DataQuality = "Good" ;
            VIC:description = "averaged over AWAS sample period" ;
      float stddv_VIC(Time) ;
            stddv_VIC:FillValue = NaNf ;
            stddv_VIC:long_name = "VIC standard_deviation over AWAS sample
period" ;
            stddv_VIC:units = "m/s" ;
      float WIC(Time) ;
            WIC:FillValue = NaNf ;
            WIC:units = "m/s" ;
            WIC:long_name = "GPS-Corrected Wind Vector, Vertical Gust Component"
;
            WIC:Category = "Wind" ;
            WIC:standard_name = "upward_air_velocity" ;
            WIC:DataQuality = "Good" ;
            WIC:description = "averaged over AWAS sample period" ;
      float stddv_WIC(Time) ;
            stddv_WIC:FillValue = NaNf ;
            stddv_WIC:long_name = "WIC standard_deviation over AWAS sample
period" ;
            stddv_WIC:units = "m/s" ;
      float WSC(Time) ;
            WSC:FillValue = NaNf ;
            WSC:units = "m/s" ;
            WSC:long_name = "GPS-Corrected Horizontal Wind Speed" ;
            WSC:Category = "Wind" ;
            WSC:standard_name = "wind_speed" ;
            WSC:DataQuality = "Good" ;
            WSC:description = "averaged over AWAS sample period" ;
      float stddv_WSC(Time) ;
            stddv_WSC:FillValue = NaNf ;
            stddv_WSC:long_name = "WSC standard_deviation over AWAS sample
period" ;
            stddv_WSC:units = "m/s" ;
      float WDC(Time) ;
            WDC:FillValue = NaNf ;
            WDC:units = "degree_T" ;
            WDC:long_name = "GPS-Corrected Horizontal Wind Direction" ;
            WDC:Category = "Wind" ;
            WDC:standard_name = "wind_from_direction" ;
            WDC:DataQuality = "Good" ;
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            WDC:description = "averaged over AWAS sample period" ;
      float stddv_WDC(Time) ;
            stddv_WDC:FillValue = NaNf ;
            stddv_WDC:long_name = "WDC standard_deviation over AWAS sample
period" ;
            stddv_WDC:units = "degree_T" ;
      float ATX(Time) ;
            ATX:FillValue = NaNf ;
            ATX:units = "deg_C" ;
            ATX:long_name = "Ambient Temperature, Reference" ;
            ATX:Category = "Atmos. State" ;
            ATX:standard_name = "air_temperature" ;
            ATX:DataQuality = "Good" ;
            ATX:description = "averaged over AWAS sample period" ;
      float stddv_ATX(Time) ;
            stddv_ATX:FillValue = NaNf ;
            stddv_ATX:long_name = "ATX standard_deviation over AWAS sample
period" ;
            stddv_ATX:units = "deg_C" ;
      float TASX(Time) ;
            TASX:FillValue = NaNf ;
            TASX:units = "m/s" ;
            TASX:long_name = "Aircraft True Airspeed, Reference" ;
            TASX:Category = "Aircraft State" ;
            TASX:standard_name = "platform_speed_wrt_air" ;
            TASX:DataQuality = "Good" ;
            TASX:description = "averaged over AWAS sample period" ;
      float stddv_TASX(Time) ;
            stddv_TASX:FillValue = NaNf ;
            stddv_TASX:long_name = "TASX standard_deviation over AWAS sample
period" ;
            stddv_TASX:units = "m/s" ;
      float THETA(Time) ;
            THETA:FillValue = NaNf ;
            THETA:units = "K" ;
            THETA:long_name = "Potential Temperature" ;
            THETA:Category = "Thermodynamic" ;
            THETA:standard_name = "air_potential_temperature" ;
            THETA:DataQuality = "Good" ;
            THETA:description = "averaged over AWAS sample period" ;
      float stddv_THETA(Time) ;
            stddv_THETA:FillValue = NaNf ;
            stddv_THETA:long_name = "THETA standard_deviation over AWAS sample
period" ;
            stddv_THETA:units = "K" ;
      float THETAE(Time) ;
            THETAE:FillValue = NaNf ;
            THETAE:units = "K" ;
            THETAE:long_name = "Equivalent Potential Temperature" ;
            THETAE:Category = "Thermodynamic" ;
            THETAE:DataQuality = "Good" ;
            THETAE:description = "averaged over AWAS sample period" ;
      float stddv_THETAE(Time) ;
            stddv_THETAE:FillValue = NaNf ;
```

```
            stddv_THETAE:long_name = "THETAE standard_deviation over AWAS sample
period" ;
            stddv_THETAE:units = "K" ;
      float THETAV(Time) ;
            THETAV:FillValue = NaNf ;
            THETAV:units = "K" ;
            THETAV:long_name = "Virtual Potential Temperature" ;
            THETAV:Category = "Thermodynamic" ;
            THETAV:DataQuality = "Good" ;
            THETAV:description = "averaged over AWAS sample period" ;
      float stddv_THETAV(Time) ;
            stddv_THETAV:FillValue = NaNf ;
            stddv_THETAV:long_name = "THETAV standard_deviation over AWAS sample
period" ;
            stddv_THETAV:units = "K" ;
      float DPXC(Time) ;
            DPXC:FillValue = NaNf ;
            DPXC:units = "deg_C" ;
            DPXC:long_name = "Dew Point Temperature, Reference" ;
            DPXC:Category = "Atmos. State" ;
            DPXC:standard_name = "dew_point_temperature" ;
            DPXC:DataQuality = "Good" ;
            DPXC:description = "averaged over AWAS sample period" ;
      float stddv_DPXC(Time) ;
            stddv_DPXC:FillValue = NaNf ;
            stddv_DPXC:long_name = "DPXC standard_deviation over AWAS sample
period" ;
            stddv_DPXC:units = "deg_C" ;
      float EDPC(Time) ;
            EDPC:FillValue = NaNf ;
            EDPC:units = "hPa" ;
            EDPC:long_name = "Ambient Water Vapor Pressure, Reference" ;
            EDPC:Category = "Thermodynamic" ;
            EDPC:DataQuality = "Good" ;
            EDPC:description = "averaged over AWAS sample period" ;
      float stddv_EDPC(Time) ;
            stddv_EDPC:FillValue = NaNf ;
            stddv_EDPC:long_name = "EDPC standard_deviation over AWAS sample
period" ;
            stddv_EDPC:units = "hPa" ;
      float MR(Time) ;
            MR:FillValue = NaNf ;
            MR:units = "gram/kg" ;
            MR:long_name = "Mixing Ratio, T-Electric" ;
            MR:Category = "Atmos. State" ;
            MR:DataQuality = "Good" ;
            MR:description = "averaged over AWAS sample period" ;
      float stddv_MR(Time) ;
            stddv_MR:FillValue = NaNf ;
            stddv_MR:long_name = "MR standard_deviation over AWAS sample period"
;
            stddv_MR:units = "gram/kg" ;
      float RHODR(Time) ;
            RHODR:FillValue = NaNf ;
            RHODR:units = "gram/m3" ;
```

```
            RHODR:long_name = "Absolute Humidity, T-Electric Right" ;
            RHODR:Category = "Atmos. State" ;
            RHODR:DataQuality = "Good" ;
            RHODR:description = "averaged over AWAS sample period" ;
      float stddv_RHODR(Time) ;
            stddv_RHODR:FillValue = NaNf ;
            stddv_RHODR:long_name = "RHODR standard_deviation over AWAS sample
period" ;
            stddv_RHODR:units = "gram/m3" ;
      float RHUM(Time) ;
            RHUM:FillValue = NaNf ;
            RHUM:units = "%" ;
            RHUM:long_name = "Relative Humidity" ;
            RHUM:Category = "Atmos. State" ;
            RHUM:DataQuality = "Good" ;
            RHUM:description = "averaged over AWAS sample period" ;
      float stddv_RHUM(Time) ;
            stddv_RHUM:FillValue = NaNf ;
            stddv_RHUM:long_name = "RHUM standard_deviation over AWAS sample
period" ;
            stddv_RHUM:units = "%" ;
      float SOLAZ(Time) ;
            SOLAZ:FillValue = NaNf ;
            SOLAZ:units = "radian" ;
            SOLAZ:long_name = "Solar Azimuth Angle" ;
            SOLAZ:Category = "Derived" ;
            SOLAZ:DataQuality = "Good" ;
            SOLAZ:Dependencies = "1 SOLZE" ;
            SOLAZ:description = "averaged over AWAS sample period" ;
      float stddv_SOLAZ(Time) ;
            stddv_SOLAZ:FillValue = NaNf ;
            stddv_SOLAZ:long_name = "SOLAZ standard_deviation over AWAS sample
period" ;
            stddv_SOLAZ:units = "radian" ;
      float SOLDE(Time) ;
            SOLDE:FillValue = NaNf ;
            SOLDE:units = "radian" ;
            SOLDE:long_name = "Solar Declination Angle" ;
            SOLDE:Category = "Derived" ;
            SOLDE:DataQuality = "Good" ;
            SOLDE:Dependencies = "1 SOLZE" ;
            SOLDE:description = "averaged over AWAS sample period" ;
      float stddv_SOLDE(Time) ;
            stddv_SOLDE:FillValue = NaNf ;
            stddv_SOLDE:long_name = "SOLDE standard_deviation over AWAS sample
period" ;
            stddv_SOLDE:units = "radian" ;
      float SOLEL(Time) ;
            SOLEL:FillValue = NaNf ;
            SOLEL:units = "radian" ;
            SOLEL:long_name = "Solar Elevation Angle" ;
            SOLEL:Category = "Derived" ;
            SOLEL:DataQuality = "Good" ;
            SOLEL:Dependencies = "1 SOLZE" ;
            SOLEL:description = "averaged over AWAS sample period" ;
```

```
      float stddv_SOLEL(Time) ;
            stddv_SOLEL:FillValue = NaNf ;
            stddv_SOLEL:long_name = "SOLEL standard_deviation over AWAS sample
period" ;
            stddv_SOLEL:units = "radian" ;
      float SOLZE(Time) ;
            SOLZE:FillValue = NaNf ;
            SOLZE:units = "radian" ;
            SOLZE:long_name = "Solar Zenith Angle" ;
            SOLZE:Category = "Derived" ;
            SOLZE:DataQuality = "Good" ;
            SOLZE:Dependencies = "8 YEAR MONTH DAY HOUR MINUTE SECOND GGLAT
GGLON" ;
            SOLZE:description = "averaged over AWAS sample period" ;
      float stddv_SOLZE(Time) ;
            stddv_SOLZE:FillValue = NaNf ;
            stddv_SOLZE:long_name = "SOLZE standard_deviation over AWAS sample
period" ;
            stddv_SOLZE:units = "radian" ;
      float u_GFS(Time) ;
            u_GFS:units = "m s^-1" ;
            u_GFS:long_name = "U-component of the velocity" ;
            u_GFS:Category = "GFS analysis interpolated variable" ;
            u_GFS:missing_value = NaNf ;
            u_GFS:description = "averaged over AWAS sample period" ;
      float stddv_u_GFS(Time) ;
            stddv_u_GFS:FillValue = NaNf ;
            stddv_u_GFS:long_name = "u_GFS standard_deviation over AWAS sample
period" ;
            stddv_u_GFS:units = "ms^-1" ;
      float v_GFS(Time) ;
            v_GFS:units = "m s^-1" ;
            v_GFS:long_name = "V-component of the velocity" ;
            v_GFS:Category = "GFS analysis interpolated variable" ;
            v_GFS:missing_value = NaNf ;
            v_GFS:description = "averaged over AWAS sample period" ;
      float stddv_v_GFS(Time) ;
            stddv_v_GFS:FillValue = NaNf ;
            stddv_v_GFS:long_name = "v_GFS standard_deviation over AWAS sample
period" ;
            stddv_v_GFS:units = "ms^-1" ;
      float w_GFS(Time) ;
            w_GFS:units = "hPa s^-1" ;
            w_GFS:long_name = "W-component of the velocity" ;
            w_GFS:Category = "GFS analysis interpolated variable" ;
            w_GFS:missing_value = NaNf ;
            w_GFS:description = "averaged over AWAS sample period" ;
      float stddv_w_GFS(Time) ;
            stddv_w_GFS:FillValue = NaNf ;
            stddv_w_GFS:long_name = "w_GFS standard_deviation over AWAS sample
period" ;
            stddv_w_GFS:units = "hPas^-1" ;
      float T_GFS(Time) ;
            T_GFS:units = "K" ;
            T_GFS:long_name = "Temperature" ;
```

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            T_GFS:Category = "GFS analysis interpolated variable" ;
            T_GFS:missing_value = NaNf ;
            T_GFS:description = "averaged over AWAS sample period" ;
      float stddv_T_GFS(Time) ;
            stddv_T_GFS:FillValue = NaNf ;
            stddv_T_GFS:long_name = "T_GFS standard_deviation over AWAS sample
period" ;
            stddv_T_GFS:units = "K" ;
      float theta_GFS(Time) ;
            theta_GFS:units = "K" ;
            theta_GFS:long_name = "Potential temperature" ;
            theta_GFS:Category = "GFS analysis interpolated variable" ;
            theta_GFS:missing_value = NaNf ;
            theta_GFS:description = "averaged over AWAS sample period" ;
      float stddv_theta_GFS(Time) ;
            stddv_theta_GFS:FillValue = NaNf ;
            stddv_theta_GFS:long_name = "theta_GFS standard_deviation over AWAS
sample period" ;
            stddv_theta_GFS:units = "K" ;
      float hgt_GFS(Time) ;
            hgt_GFS:units = "m" ;
            hgt_GFS:long_name = "Geopotential height" ;
            hgt_GFS:Category = "GFS analysis interpolated variable" ;
            hgt_GFS:missing_value = NaNf ;
            hgt_GFS:description = "averaged over AWAS sample period" ;
      float stddv_hgt_GFS(Time) ;
            stddv_hgt_GFS:FillValue = NaNf ;
            stddv_hgt_GFS:long_name = "hgt_GFS standard_deviation over AWAS
sample period" ;
            stddv_hgt_GFS:units = "m" ;
      float SH_GFS(Time) ;
            SH_GFS:units = "kg kg^-1" ;
            SH_GFS:long_name = "Specific humidity" ;
            SH_GFS:Category = "GFS analysis interpolated variable" ;
            SH_GFS:missing_value = NaNf ;
            SH_GFS:description = "averaged over AWAS sample period" ;
      float stddv_SH_GFS(Time) ;
            stddv_SH_GFS:FillValue = NaNf ;
            stddv_SH_GFS:long_name = "SH_GFS standard_deviation over AWAS sample
period" ;
            stddv_SH_GFS:units = "kgkg^-1" ;
      float pv_GFS(Time) ;
            pv_GFS:units = "s^-1" ;
            pv_GFS:long_name = "Potential vorticity" ;
            pv_GFS:Category = "GFS analysis interpolated variable" ;
            pv_GFS:missing_value = NaNf ;
            pv_GFS:description = "averaged over AWAS sample period" ;
      float stddv_pv_GFS(Time) ;
            stddv_pv_GFS:FillValue = NaNf ;
            stddv_pv_GFS:long_name = "pv_GFS standard_deviation over AWAS sample
period" ;
            stddv_pv_GFS:units = "s^-1" ;
      float eqlat_GFS(Time) ;
            eqlat_GFS:units = "degrees" ;
            eqlat_GFS:long_name = "Equivalent latitude" ;
```

```
            eqlat_GFS:potential_temperature_surface = 250.f, 252.5f, 255.f,
257.5f, 260.f, 262.5f, 265.f, 267.5f, 270.f, 272.5f, 275.f, 277.5f, 280.f,
282.5f, 285.f, 287.5f, 290.f, 292.5f, 295.f, 297.5f, 300.f, 302.5f, 305.f,
307.5f, 310.f, 312.5f, 315.f, 317.5f, 320.f, 322.5f, 325.f, 327.5f, 330.f,
332.5f, 335.f, 337.5f, 340.f, 342.5f, 345.f, 347.5f, 350.f, 352.5f, 355.f,
357.5f, 360.f, 362.5f, 365.f, 367.5f, 370.f, 372.5f, 375.f, 377.5f, 380.f,
382.5f, 385.f, 387.5f, 390.f, 392.5f, 395.f, 397.5f, 400.f, 402.5f, 405.f,
407.5f, 410.f, 412.5f, 415.f, 417.5f, 420.f, 422.5f, 425.f, 427.5f, 430.f,
432.5f, 435.f, 437.5f, 440.f, 442.5f, 445.f, 447.5f, 450.f, 452.5f, 455.f,
457.5f, 460.f, 462.5f, 465.f, 467.5f, 470.f, 472.5f, 475.f, 477.5f, 480.f,
482.5f, 485.f, 487.5f, 490.f, 492.5f, 495.f, 497.5f, 500.f ;
            eqlat_GFS:percent_missing_grid_points = 94.60223f, 91.56117f,
87.77097f, 83.77821f, 80.54877f, 78.09953f, 76.42235f, 74.73702f, 72.74652f,
69.62257f, 65.53533f, 60.80292f, 56.60868f, 52.45587f, 47.99775f, 44.19488f,
40.15963f, 35.09115f, 30.1057f, 23.84109f, 13.36715f, 5.267861f, 4.005112f,
2.752761f, 1.934438f, 1.173985f, 0.249566f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f,
0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f,
0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f,
0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f,
0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f,
0.f, 0.f, 0.f, 94.65317f, 91.94577f, 88.03997f, 83.85371f, 80.44147f, 78.15016f,
76.41676f, 74.70808f, 72.39553f, 69.50985f, 65.22382f, 60.64695f, 56.3035f,
52.33154f, 48.148f, 44.36894f, 40.35795f, 35.34659f, 30.28775f, 23.94206f,
12.73299f, 4.305314f, 2.667161f, 1.596258f, 0.9244189f, 0.4680869f, 0.1255365f,
0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f,
0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f,
0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f,
0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f,
0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 94.38507f, 92.30444f,
88.29134f, 84.08429f, 80.35452f, 78.25626f, 76.58073f, 74.77907f, 72.42823f,
69.36292f, 64.6623f, 60.29369f, 55.86209f, 52.09298f, 47.92707f, 44.29299f,
40.37001f, 35.5523f, 29.74477f, 23.0202f, 10.49986f, 1.881993f, 0.8373119f,
0.3285349f, 0.08665485f, 0.01265914f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f,
0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f,
0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f,
0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f,
0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f, 0.f,
0.f, 0.f, 0.f ;
            eqlat_GFS:GFS_analysis_date = "20080418T120000Z, 20080418T180000Z,
20080419T000000Z" ;
            eqlat_GFS:Category = "GFS analysis interpolated variable" ;
            eqlat_GFS:missing_value = NaNf ;
            eqlat_GFS:description = "averaged over AWAS sample period" ;
      float stddv_eqlat_GFS(Time) ;
            stddv_eqlat_GFS:FillValue = NaNf ;
            stddv_eqlat_GFS:long_name = "eqlat_GFS standard_deviation over AWAS
sample period" ;
            stddv_eqlat_GFS:units = "degrees" ;
      float dthetadz_GFS(Time) ;
            dthetadz_GFS:units = "K km^-1" ;
            dthetadz_GFS:long_name = "Static stability d(theta)/dz" ;
            dthetadz_GFS:Category = "GFS analysis interpolated variable" ;
            dthetadz_GFS:missing_value = NaNf ;
            dthetadz_GFS:description = "averaged over AWAS sample period" ;
      float stddv_dthetadz_GFS(Time) ;
```

```
            stddv_dthetadz_GFS:FillValue = NaNf ;
            stddv_dthetadz_GFS:long_name = "dthetadz_GFS standard_deviation over
AWAS sample period" ;
            stddv_dthetadz_GFS:units = "Kkm^-1" ;
      float p_trop_GFS(Time) ;
            p_trop_GFS:units = "Pa" ;
            p_trop_GFS:long_name = "Pressure at the tropopause" ;
            p_trop_GFS:Category = "GFS analysis interpolated variable" ;
            p_trop_GFS:missing_value = NaNf ;
            p_trop_GFS:description = "averaged over AWAS sample period" ;
      float stddv_p_trop_GFS(Time) ;
            stddv_p_trop_GFS:FillValue = NaNf ;
            stddv_p_trop_GFS:long_name = "p_trop_GFS standard_deviation over
AWAS sample period" ;
            stddv_p_trop_GFS:units = "Pa" ;
      float z_trop_GFS(Time) ;
            z_trop_GFS:units = "m" ;
            z_trop_GFS:long_name = "Geopotential height of the tropopause" ;
            z_trop_GFS:Category = "GFS analysis interpolated variable" ;
            z_trop_GFS:missing_value = NaNf ;
            z_trop_GFS:description = "averaged over AWAS sample period" ;
      float stddv_z_trop_GFS(Time) ;
            stddv_z_trop_GFS:FillValue = NaNf ;
            stddv_z_trop_GFS:long_name = "z_trop_GFS standard_deviation over
AWAS sample period" ;
            stddv_z_trop_GFS:units = "m" ;
      float T_trop_GFS(Time) ;
            T_trop_GFS:units = "K" ;
            T_trop_GFS:long_name = "Temperature at the tropopause" ;
            T_trop_GFS:Category = "GFS analysis interpolated variable" ;
            T_trop_GFS:missing_value = NaNf ;
            T_trop_GFS:description = "averaged over AWAS sample period" ;
      float stddv_T_trop_GFS(Time) ;
            stddv_T_trop_GFS:FillValue = NaNf ;
            stddv_T_trop_GFS:long_name = "T_trop_GFS standard_deviation over
AWAS sample period" ;
            stddv_T_trop_GFS:units = "K" ;
      float trop_type_GFS(Time) ;
            trop_type_GFS:long_name = "GFS Tropopause Type" ;
            trop_type_GFS:Category = "GFS analysis interpolated variable
quality" ;
            trop_type_GFS:Description = "1 = Primary Tropopause, 2 = Secondary
Tropopause or Indeterminate" ;
            trop_type_GFS:description = "averaged over AWAS sample period" ;
      float stddv_trop_type_GFS(Time) ;
            stddv_trop_type_GFS:FillValue = NaNf ;
            stddv_trop_type_GFS:long_name = "trop_type_GFS standard_deviation
over AWAS sample period" ;
            stddv_trop_type_GFS:units = "K" ;
      float z_trop2_GFS(Time) ;
            z_trop2_GFS:units = "m" ;
            z_trop2_GFS:long_name = "Geopotential height of the secondary
tropopause" ;
            z_trop2_GFS:Category = "GFS analysis interpolated variable" ;
```

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            z_trop2_GFS:Description = "Computed by Homeyer & Bowman using GFS
analysis and WMO definition" ;
            z_trop2_GFS:missing_value = NaNf ;
            z_trop2_GFS:description = "averaged over AWAS sample period" ;
      float stddv_z_trop2_GFS(Time) ;
            stddv_z_trop2_GFS:FillValue = NaNf ;
            stddv_z_trop2_GFS:long_name = "z_trop2_GFS standard_deviation over
AWAS sample period" ;
            stddv_z_trop2_GFS:units = "m" ;
      float p_trop2_GFS(Time) ;
            p_trop2_GFS:units = "Pa" ;
            p_trop2_GFS:long_name = "Pressure at the secondary tropopause" ;
            p_trop2_GFS:Category = "GFS analysis interpolated variable" ;
            p_trop2_GFS:Description = "Computed by Homeyer & Bowman using GFS
analysis and WMO definition" ;
            p_trop2_GFS:missing_value = NaNf ;
            p_trop2_GFS:description = "averaged over AWAS sample period" ;
      float stddv_p_trop2_GFS(Time) ;
            stddv_p_trop2_GFS:FillValue = NaNf ;
            stddv_p_trop2_GFS:long_name = "p_trop2_GFS standard_deviation over
AWAS sample period" ;
            stddv_p_trop2_GFS:units = "Pa" ;
      float z_pv2_GFS(Time) ;
            z_pv2_GFS:units = "m" ;
            z_pv2_GFS:long_name = "Geopotential height of the 2.0 pvu surface" ;
            z_pv2_GFS:Category = "GFS analysis interpolated variable" ;
            z_pv2_GFS:missing_value = NaNf ;
            z_pv2_GFS:description = "averaged over AWAS sample period" ;
      float stddv_z_pv2_GFS(Time) ;
            stddv_z_pv2_GFS:FillValue = NaNf ;
            stddv_z_pv2_GFS:long_name = "z_pv2_GFS standard_deviation over AWAS
sample period" ;
            stddv_z_pv2_GFS:units = "m" ;
      float p_pv2_GFS(Time) ;
            p_pv2_GFS:units = "hPa" ;
            p_pv2_GFS:long_name = "Pressure at the 2.0 pvu surface" ;
            p_pv2_GFS:Category = "GFS analysis interpolated variable" ;
            p_pv2_GFS:missing_value = NaNf ;
            p_pv2_GFS:description = "averaged over AWAS sample period" ;
      float stddv_p_pv2_GFS(Time) ;
            stddv_p_pv2_GFS:FillValue = NaNf ;
            stddv_p_pv2_GFS:long_name = "p_pv2_GFS standard_deviation over AWAS
sample period" ;
            stddv_p_pv2_GFS:units = "hPa" ;
      float theta_pv2_GFS(Time) ;
            theta_pv2_GFS:units = "K" ;
            theta_pv2_GFS:long_name = "Potential temperature at the 2.0 pvu
surface" ;
            theta_pv2_GFS:Category = "GFS analysis interpolated variable" ;
            theta_pv2_GFS:missing_value = NaNf ;
            theta_pv2_GFS:description = "averaged over AWAS sample period" ;
      float stddv_theta_pv2_GFS(Time) ;
            stddv_theta_pv2_GFS:FillValue = NaNf ;
            stddv_theta_pv2_GFS:long_name = "theta_pv2_GFS standard_deviation
over AWAS sample period" ;
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            stddv_theta_pv2_GFS:units = "K" ;
      float z_pv4_GFS(Time) ;
            z_pv4_GFS:units = "m" ;
            z_pv4_GFS:long_name = "Geopotential height of the 4.0 pvu surface" ;
            z_pv4_GFS:Category = "GFS analysis interpolated variable" ;
            z_pv4_GFS:missing_value = NaNf ;
            z_pv4_GFS:description = "averaged over AWAS sample period" ;
      float stddv_z_pv4_GFS(Time) ;
            stddv_z_pv4_GFS:FillValue = NaNf ;
            stddv_z_pv4_GFS:long_name = "z_pv4_GFS standard_deviation over AWAS
sample period" ;
            stddv_z_pv4_GFS:units = "m" ;
      float p_pv4_GFS(Time) ;
            p_pv4_GFS:units = "hPa" ;
            p_pv4_GFS:long_name = "Pressure at the 4.0 pvu surface" ;
            p_pv4_GFS:Category = "GFS analysis interpolated variable" ;
            p_pv4_GFS:missing_value = NaNf ;
            p_pv4_GFS:description = "averaged over AWAS sample period" ;
      float stddv_p_pv4_GFS(Time) ;
            stddv_p_pv4_GFS:FillValue = NaNf ;
            stddv_p_pv4_GFS:long_name = "p_pv4_GFS standard_deviation over AWAS
sample period" ;
            stddv_p_pv4_GFS:units = "hPa" ;
      float theta_pv4_GFS(Time) ;
            theta_pv4_GFS:units = "K" ;
            theta_pv4_GFS:long_name = "Potential temperature at the 4.0 pvu
surface" ;
            theta_pv4_GFS:Category = "GFS analysis interpolated variable" ;
            theta_pv4_GFS:missing_value = NaNf ;
            theta_pv4_GFS:description = "averaged over AWAS sample period" ;
      float stddv_theta_pv4_GFS(Time) ;
            stddv_theta_pv4_GFS:FillValue = NaNf ;
            stddv_theta_pv4_GFS:long_name = "theta_pv4_GFS standard_deviation
over AWAS sample period" ;
            stddv_theta_pv4_GFS:units = "K" ;
      float z_pv8_GFS(Time) ;
            z_pv8_GFS:units = "m" ;
            z_pv8_GFS:long_name = "Geopotential height of the 8.0 pvu surface" ;
            z_pv8_GFS:Category = "GFS analysis interpolated variable" ;
            z_pv8_GFS:missing_value = NaNf ;
            z_pv8_GFS:description = "averaged over AWAS sample period" ;
      float stddv_z_pv8_GFS(Time) ;
            stddv_z_pv8_GFS:FillValue = NaNf ;
            stddv_z_pv8_GFS:long_name = "z_pv8_GFS standard_deviation over AWAS
sample period" ;
            stddv_z_pv8_GFS:units = "m" ;
      float p_pv8_GFS(Time) ;
            p_pv8_GFS:units = "hPa" ;
            p_pv8_GFS:long_name = "Pressure at the 8.0 pvu surface" ;
            p_pv8_GFS:Category = "GFS analysis interpolated variable" ;
            p_pv8_GFS:missing_value = NaNf ;
            p_pv8_GFS:description = "averaged over AWAS sample period" ;
      float stddv_p_pv8_GFS(Time) ;
            stddv_p_pv8_GFS:FillValue = NaNf ;
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            stddv_p_pv8_GFS:long_name = "p_pv8_GFS standard_deviation over AWAS
sample period" ;
            stddv_p_pv8_GFS:units = "hPa" ;
      float theta_pv8_GFS(Time) ;
            theta_pv8_GFS:units = "K" ;
            theta_pv8_GFS:long_name = "Potential temperature at the 8.0 pvu
surface" ;
            theta_pv8_GFS:Category = "GFS analysis interpolated variable" ;
            theta_pv8_GFS:missing_value = NaNf ;
            theta_pv8_GFS:description = "averaged over AWAS sample period" ;
      float stddv_theta_pv8_GFS(Time) ;
            stddv_theta_pv8_GFS:FillValue = NaNf ;
            stddv_theta_pv8_GFS:long_name = "theta_pv8_GFS standard_deviation
over AWAS sample period" ;
            stddv_theta_pv8_GFS:units = "K" ;
      float CO_RAF(Time) ;
            CO_RAF:FillValue = NaNf ;
            CO_RAF:units = "ppbv" ;
            CO_RAF:long_name = "CO_RAF" ;
            CO_RAF:Category = "Analog" ;
            CO_RAF:DataQuality = "Final" ;
            CO_RAF:description = "averaged over AWAS sample period" ;
      float stddv_CO_RAF(Time) ;
            stddv_CO_RAF:FillValue = NaNf ;
            stddv_CO_RAF:long_name = "CO_RAF standard_deviation over AWAS sample
period" ;
            stddv_CO_RAF:units = "ppbv" ;
      float NO_NCAR(Time) ;
            NO_NCAR:FillValue = "          NaN" ;
            NO_NCAR:units = "PPTV" ;
            NO_NCAR:long_name = "NO (pptv)" ;
            NO_NCAR:description = "averaged over AWAS sample period" ;
      float stddv_NO_NCAR(Time) ;
            stddv_NO_NCAR:FillValue = NaNf ;
            stddv_NO_NCAR:long_name = "NO_NCAR standard_deviation over AWAS
sample period" ;
            stddv_NO_NCAR:units = "PPTV" ;
      float NOY_NCAR(Time) ;
            NOY_NCAR:FillValue = "          NaN" ;
            NOY_NCAR:units = "PPTV" ;
            NOY_NCAR:long_name = "NOy (pptv)" ;
            NOY_NCAR:description = "averaged over AWAS sample period" ;
      float stddv_NOY_NCAR(Time) ;
            stddv_NOY_NCAR:FillValue = NaNf ;
            stddv_NOY_NCAR:long_name = "NOY_NCAR standard_deviation over AWAS
sample period" ;
            stddv_NOY_NCAR:units = "PPTV" ;
      float O3_NCAR(Time) ;
            O3_NCAR:FillValue = "          NaN" ;
            O3_NCAR:units = "PPBV" ;
            O3_NCAR:long_name = "O3 (ppbv)" ;
            O3_NCAR:description = "averaged over AWAS sample period" ;
      float stddv_O3_NCAR(Time) ;
            stddv_O3_NCAR:FillValue = NaNf ;
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            stddv_O3_NCAR:long_name = "O3_NCAR standard_deviation over AWAS
sample period" ;
            stddv_O3_NCAR:units = "PPBV" ;
      float O3_NOAA(Time) ;
            O3_NOAA:FillValue = "          NaN" ;
            O3_NOAA:units = "PPB" ;
            O3_NOAA:long_name = "OZONE VOLUME MIXING RATIO (O3_PPB)" ;
            O3_NOAA:description = "averaged over AWAS sample period" ;
      float stddv_O3_NOAA(Time) ;
            stddv_O3_NOAA:FillValue = NaNf ;
            stddv_O3_NOAA:long_name = "O3_NOAA standard_deviation over AWAS
sample period" ;
            stddv_O3_NOAA:units = "PPB" ;
      float H2O_UCATS(Time) ;
            H2O_UCATS:FillValue = "          NaN" ;
            H2O_UCATS:units = "PPM" ;
            H2O_UCATS:long_name = "UCATS H2O MIXING RATIO  (PPM)" ;
            H2O_UCATS:description = "averaged over AWAS sample period" ;
      float stddv_H2O_UCATS(Time) ;
            stddv_H2O_UCATS:FillValue = NaNf ;
            stddv_H2O_UCATS:long_name = "H2O_UCATS standard_deviation over AWAS
sample period" ;
            stddv_H2O_UCATS:units = "PPM" ;
      float IWC_CLH(Time) ;
            IWC_CLH:FillValue = "          NaN" ;
            IWC_CLH:units = "ppmv" ;
            IWC_CLH:long_name = "enhanced total water (ppmv)" ;
            IWC_CLH:description = "averaged over AWAS sample period" ;
      float stddv_IWC_CLH(Time) ;
            stddv_IWC_CLH:FillValue = NaNf ;
            stddv_IWC_CLH:long_name = "IWC_CLH standard_deviation over AWAS
sample period" ;
            stddv_IWC_CLH:units = "ppmv" ;
      float H20_NumDensi_VXL(Time) ;
            H20_NumDensi_VXL:fill_value = NaNf ;
            H20_NumDensi_VXL:long_name = "inactive probe" ;
            H20_NumDensi_VXL:units = "missing" ;
            H20_NumDensi_VXL:description = "averaged over AWAS sample period" ;
      float stddv_H20_NumDensi_VXL(Time) ;
            stddv_H20_NumDensi_VXL:FillValue = NaNf ;
            stddv_H20_NumDensi_VXL:long_name = "H20_NumDensi_VXL
standard_deviation over AWAS sample period" ;
            stddv_H20_NumDensi_VXL:units = "missing" ;
      float DewPoint_VXL(Time) ;
            DewPoint_VXL:fill_value = NaNf ;
            DewPoint_VXL:long_name = "inactive probe" ;
            DewPoint_VXL:units = "missing" ;
            DewPoint_VXL:description = "averaged over AWAS sample period" ;
      float stddv_DewPoint_VXL(Time) ;
            stddv_DewPoint_VXL:FillValue = NaNf ;
            stddv_DewPoint_VXL:long_name = "DewPoint_VXL standard_deviation over
AWAS sample period" ;
            stddv_DewPoint_VXL:units = "missing" ;
      float H2O_VXL(Time) ;
            H2O_VXL:fill_value = NaNf ;
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```
            H2O_VXL:long_name = "inactive probe" ;
            H2O_VXL:units = "missing" ;
            H2O_VXL:description = "averaged over AWAS sample period" ;
      float stddv_H2O_VXL(Time) ;
            stddv_H2O_VXL:FillValue = NaNf ;
            stddv_H2O_VXL:long_name = "H2O_VXL standard_deviation over AWAS
sample period" ;
            stddv_H2O_VXL:units = "missing" ;
      float CO2_QCLS(Time) ;
            CO2_QCLS:fill_value = NaNf ;
            CO2_QCLS:long_name = "inactive probe" ;
            CO2_QCLS:units = "missing" ;
            CO2_QCLS:description = "averaged over AWAS sample period" ;
      float stddv_CO2_QCLS(Time) ;
            stddv_CO2_QCLS:FillValue = NaNf ;
            stddv_CO2_QCLS:long_name = "CO2_QCLS standard_deviation over AWAS
sample period" ;
            stddv_CO2_QCLS:units = "missing" ;
      float CH4_QCLS(Time) ;
            CH4_QCLS:fill_value = NaNf ;
            CH4_QCLS:long_name = "inactive probe" ;
            CH4_QCLS:units = "missing" ;
            CH4_QCLS:description = "averaged over AWAS sample period" ;
      float stddv_CH4_QCLS(Time) ;
            stddv_CH4_QCLS:FillValue = NaNf ;
            stddv_CH4_QCLS:long_name = "CH4_QCLS standard_deviation over AWAS
sample period" ;
            stddv_CH4_QCLS:units = "missing" ;
      float N2O_QCLS(Time) ;
            N2O_QCLS:fill_value = NaNf ;
            N2O_QCLS:long_name = "inactive probe" ;
            N2O_QCLS:units = "missing" ;
            N2O_QCLS:description = "averaged over AWAS sample period" ;
      float stddv_N2O_QCLS(Time) ;
            stddv_N2O_QCLS:FillValue = NaNf ;
            stddv_N2O_QCLS:long_name = "N2O_QCLS standard_deviation over AWAS
sample period" ;
            stddv_N2O_QCLS:units = "missing" ;
      float CO_QCLS(Time) ;
            CO_QCLS:fill_value = NaNf ;
            CO_QCLS:long_name = "inactive probe" ;
            CO_QCLS:units = "missing" ;
            CO_QCLS:description = "averaged over AWAS sample period" ;
      float stddv_CO_QCLS(Time) ;
            stddv_CO_QCLS:FillValue = NaNf ;
            stddv_CO_QCLS:long_name = "CO_QCLS standard_deviation over AWAS
sample period" ;
            stddv_CO_QCLS:units = "missing" ;
      float SID_ICE(Time) ;
            SID_ICE:long_name = "Liquid Water Content" ;
            SID_ICE:units = "g/m3" ;
            SID_ICE:description = "averaged over AWAS sample period" ;
      float stddv_SID_ICE(Time) ;
            stddv_SID_ICE:FillValue = NaNf ;
```

```
            stddv_SID_ICE:long_name = "SID_ICE standard_deviation over AWAS
sample period" ;
            stddv_SID_ICE:units = "g/m3" ;
      float SID_Mean_Dia(Time) ;
            SID_Mean_Dia:long_name = "Mean Diameter" ;
            SID_Mean_Dia:units = "um" ;
            SID_Mean_Dia:description = "averaged over AWAS sample period" ;
      float stddv_SID_Mean_Dia(Time) ;
            stddv_SID_Mean_Dia:FillValue = NaNf ;
            stddv_SID_Mean_Dia:long_name = "SID_Mean_Dia standard_deviation over
AWAS sample period" ;
            stddv_SID_Mean_Dia:units = "um" ;
      float SID_Num_Con(Time) ;
            SID_Num_Con:long_name = "Total Number Concentration" ;
            SID_Num_Con:units = "#/cm3" ;
            SID_Num_Con:description = "averaged over AWAS sample period" ;
      float stddv_SID_Num_Con(Time) ;
            stddv_SID_Num_Con:FillValue = NaNf ;
            stddv_SID_Num_Con:long_name = "SID_Num_Con standard_deviation over
AWAS sample period" ;
            stddv_SID_Num_Con:units = "#/cm3" ;
      float H2O_RAF(Time) ;
            H2O_RAF:FillValue = "          NaN" ;
            H2O_RAF:units = "ppmv" ;
            H2O_RAF:long_name = "H20_RAF" ;
            H2O_RAF:description = "averaged over AWAS sample period" ;
      float stddv_H2O_RAF(Time) ;
            stddv_H2O_RAF:FillValue = NaNf ;
            stddv_H2O_RAF:long_name = "H2O_RAF standard_deviation over AWAS
sample period" ;
            stddv_H2O_RAF:units = "ppmv" ;
      float O3_UCATS(Time) ;
            O3_UCATS:FillValue = "          NaN" ;
            O3_UCATS:units = "PPB" ;
            O3_UCATS:long_name = "UCATS OZONE MIXING RATIO  (PPB)" ;
            O3_UCATS:description = "averaged over AWAS sample period" ;
      float stddv_O3_UCATS(Time) ;
            stddv_O3_UCATS:FillValue = NaNf ;
            stddv_O3_UCATS:long_name = "O3_UCATS standard_deviation over AWAS
sample period" ;
            stddv_O3_UCATS:units = "PPB" ;
      float CO2_AO2(Time) ;
            CO2_AO2:FillValue = "          NaN" ;
            CO2_AO2:units = "ppmv" ;
            CO2_AO2:long_name = "CO2_AO2" ;
            CO2_AO2:description = "averaged over AWAS sample period" ;
      float stddv_CO2_AO2(Time) ;
            stddv_CO2_AO2:FillValue = NaNf ;
            stddv_CO2_AO2:long_name = "CO2_AO2 standard_deviation over AWAS
sample period" ;
            stddv_CO2_AO2:units = "ppmv" ;
      float O2_AO2(Time) ;
            O2_AO2:FillValue = "          NaN" ;
            O2_AO2:units = "meg" ;
            O2_AO2:long_name = " d(O2/N2) ratio" ;
```

```
            O2_AO2:description = "averaged over AWAS sample period" ;
      float stddv_O2_AO2(Time) ;
            stddv_O2_AO2:FillValue = NaNf ;
            stddv_O2_AO2:long_name = "O2_AO2 standard_deviation over AWAS sample
period" ;
            stddv_O2_AO2:units = "meg" ;
      float N2O_UCATS(Time) ;
            N2O_UCATS:FillValue = "          NaN" ;
            N2O_UCATS:units = "PPB" ;
            N2O_UCATS:long_name = "N2O MIXING RATIO  (PPB)" ;
            N2O_UCATS:description = "averaged over AWAS sample period" ;
      float stddv_N2O_UCATS(Time) ;
            stddv_N2O_UCATS:FillValue = NaNf ;
            stddv_N2O_UCATS:long_name = "N2O_UCATS standard_deviation over AWAS
sample period" ;
            stddv_N2O_UCATS:units = "PPB" ;
      float N2Oe_UCATS(Time) ;
            N2Oe_UCATS:FillValue = "          NaN" ;
            N2Oe_UCATS:units = "PPB" ;
            N2Oe_UCATS:long_name = "N2O ERROR 1-s (PPB)" ;
            N2Oe_UCATS:description = "averaged over AWAS sample period" ;
      float stddv_N2Oe_UCATS(Time) ;
            stddv_N2Oe_UCATS:FillValue = NaNf ;
            stddv_N2Oe_UCATS:long_name = "N2Oe_UCATS standard_deviation over
AWAS sample period" ;
            stddv_N2Oe_UCATS:units = "PPB" ;
      float SF6_UCATS(Time) ;
            SF6_UCATS:FillValue = "          NaN" ;
            SF6_UCATS:units = "PPT" ;
            SF6_UCATS:long_name = "SF6 MIXING RATIO (PPT)" ;
            SF6_UCATS:description = "averaged over AWAS sample period" ;
      float stddv_SF6_UCATS(Time) ;
            stddv_SF6_UCATS:FillValue = NaNf ;
            stddv_SF6_UCATS:long_name = "SF6_UCATS standard_deviation over AWAS
sample period" ;
            stddv_SF6_UCATS:units = "PPT" ;
      float SF6e_UCATS(Time) ;
            SF6e_UCATS:FillValue = "          NaN" ;
            SF6e_UCATS:units = "PPT" ;
            SF6e_UCATS:long_name = "SF6 ERROR 1-s (PPT)" ;
            SF6e_UCATS:description = "averaged over AWAS sample period" ;
      float stddv_SF6e_UCATS(Time) ;
            stddv_SF6e_UCATS:FillValue = NaNf ;
            stddv_SF6e_UCATS:long_name = "SF6e_UCATS standard_deviation over
AWAS sample period" ;
            stddv_SF6e_UCATS:units = "PPT" ;
      float H2_UCATS(Time) ;
            H2_UCATS:FillValue = "          NaN" ;
            H2_UCATS:units = "PPB" ;
            H2_UCATS:long_name = "H2 MIXING RATIO (PPB)" ;
            H2_UCATS:description = "averaged over AWAS sample period" ;
      float stddv_H2_UCATS(Time) ;
            stddv_H2_UCATS:FillValue = NaNf ;
            stddv_H2_UCATS:long_name = "H2_UCATS standard_deviation over AWAS
sample period" ;
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            stddv_H2_UCATS:units = "PPB" ;
      float H2e_UCATS(Time) ;
            H2e_UCATS:FillValue = "          NaN" ;
            H2e_UCATS:units = "PPB" ;
            H2e_UCATS:long_name = "H2 ERROR 1-s (PPB)" ;
            H2e_UCATS:description = "averaged over AWAS sample period" ;
      float stddv_H2e_UCATS(Time) ;
            stddv_H2e_UCATS:FillValue = NaNf ;
            stddv_H2e_UCATS:long_name = "H2e_UCATS standard_deviation over AWAS
sample period" ;
            stddv_H2e_UCATS:units = "PPB" ;
      float CH4_UCATS(Time) ;
            CH4_UCATS:FillValue = "          NaN" ;
            CH4_UCATS:units = "PPB" ;
            CH4_UCATS:long_name = "CH4 MIXING RATIO (PPB)" ;
            CH4_UCATS:description = "averaged over AWAS sample period" ;
      float stddv_CH4_UCATS(Time) ;
            stddv_CH4_UCATS:FillValue = NaNf ;
            stddv_CH4_UCATS:long_name = "CH4_UCATS standard_deviation over AWAS
sample period" ;
            stddv_CH4_UCATS:units = "PPB" ;
      float CH4e_UCATS(Time) ;
            CH4e_UCATS:FillValue = "          NaN" ;
            CH4e_UCATS:units = "PPB" ;
            CH4e_UCATS:long_name = "CH4 ERROR 1-s (PPB)" ;
            CH4e_UCATS:description = "averaged over AWAS sample period" ;
      float stddv_CH4e_UCATS(Time) ;
            stddv_CH4e_UCATS:FillValue = NaNf ;
            stddv_CH4e_UCATS:long_name = "CH4e_UCATS standard_deviation over
AWAS sample period" ;
            stddv_CH4e_UCATS:units = "PPB" ;
      float CO_UCATS(Time) ;
            CO_UCATS:FillValue = "          NaN" ;
            CO_UCATS:units = "PPB" ;
            CO_UCATS:long_name = "CO MIXING RATIO  (PPB)" ;
            CO_UCATS:description = "averaged over AWAS sample period" ;
      float stddv_CO_UCATS(Time) ;
            stddv_CO_UCATS:FillValue = NaNf ;
            stddv_CO_UCATS:long_name = "CO_UCATS standard_deviation over AWAS
sample period" ;
            stddv_CO_UCATS:units = "PPB" ;
      float COe_UCATS(Time) ;
            COe_UCATS:FillValue = "          NaN" ;
            COe_UCATS:units = "PPB" ;
            COe_UCATS:long_name = "CO ERROR 1-s (PPB)" ;
            COe_UCATS:description = "averaged over AWAS sample period" ;
      float stddv_COe_UCATS(Time) ;
            stddv_COe_UCATS:FillValue = NaNf ;
            stddv_COe_UCATS:long_name = "COe_UCATS standard_deviation over AWAS
sample period" ;
            stddv_COe_UCATS:units = "PPB" ;
      float CH4_Methane(Time) ;
            CH4_Methane:FillValue = NaNf ;
            CH4_Methane:units = "nmol/mol" ;
            CH4_Methane:long_name = "AWAS CH4 Methane mixing ratio" ;
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      float N2O_Nitrous_Oxide(Time) ;
            N2O_Nitrous_Oxide:FillValue = NaNf ;
            N2O_Nitrous_Oxide:units = "nmol/mol" ;
            N2O_Nitrous_Oxide:long_name = "AWAS N2O Nitrous Oxide mixing ratio"
;
      float CO_Carbon_monoxide(Time) ;
            CO_Carbon_monoxide:FillValue = NaNf ;
            CO_Carbon_monoxide:units = "nmol/mol" ;
            CO_Carbon_monoxide:long_name = "AWAS CO Carbon monoxide mixing
ratio" ;
      float CCl3F_CFC_11(Time) ;
            CCl3F_CFC_11:FillValue = NaNf ;
            CCl3F_CFC_11:units = "pnmol/mol" ;
            CCl3F_CFC_11:long_name = "AWAS CCl3F CFC-11 mixing ratio" ;
      float CCl2F2_CFC_12(Time) ;
            CCl2F2_CFC_12:FillValue = NaNf ;
            CCl2F2_CFC_12:units = "pnmol/mol" ;
            CCl2F2_CFC_12:long_name = "AWAS CCl2F2 CFC-12 mixing ratio" ;
      float C2Cl2F4_CFC_114(Time) ;
            C2Cl2F4_CFC_114:FillValue = NaNf ;
            C2Cl2F4_CFC_114:units = "pnmol/mol" ;
            C2Cl2F4_CFC_114:long_name = "AWAS C2Cl2F4 CFC-114 mixing ratio" ;
      float C2Cl3F3_CFC_113(Time) ;
            C2Cl3F3_CFC_113:FillValue = NaNf ;
            C2Cl3F3_CFC_113:units = "pnmol/mol" ;
            C2Cl3F3_CFC_113:long_name = "AWAS C2Cl3F3 CFC-113 mixing ratio" ;
      float CHClF2_HCFC_22(Time) ;
            CHClF2_HCFC_22:FillValue = NaNf ;
            CHClF2_HCFC_22:units = "pnmol/mol" ;
            CHClF2_HCFC_22:long_name = "AWAS CHClF2 HCFC-22 mixing ratio" ;
      float CH3CCl2F_HCFC_141b(Time) ;
            CH3CCl2F_HCFC_141b:FillValue = NaNf ;
            CH3CCl2F_HCFC_141b:units = "pnmol/mol" ;
            CH3CCl2F_HCFC_141b:long_name = "AWAS CH3CCl2F HCFC-141b mixing
ratio" ;
      float CH3CClF2_HCFC_142b(Time) ;
            CH3CClF2_HCFC_142b:FillValue = NaNf ;
            CH3CClF2_HCFC_142b:units = "pnmol/mol" ;
            CH3CClF2_HCFC_142b:long_name = "AWAS CH3CClF2 HCFC-142b mixing
ratio" ;
      float CHCl2F_HCFC_21(Time) ;
            CHCl2F_HCFC_21:FillValue = NaNf ;
            CHCl2F_HCFC_21:units = "pnmol/mol" ;
            CHCl2F_HCFC_21:long_name = "AWAS CHCl2F HCFC-21 mixing ratio" ;
      float C2HCl2F3_HCFC_123(Time) ;
            C2HCl2F3_HCFC_123:FillValue = NaNf ;
            C2HCl2F3_HCFC_123:units = "pnmol/mol" ;
            C2HCl2F3_HCFC_123:long_name = "AWAS C2HCl2F3 HCFC-123 mixing ratio"
;
      float C2HClF4_HCFC_124(Time) ;
            C2HClF4_HCFC_124:FillValue = NaNf ;
            C2HClF4_HCFC_124:units = "pnmol/mol" ;
            C2HClF4_HCFC_124:long_name = "AWAS C2HClF4 HCFC-124 mixing ratio" ;
      float C2H2F4_HFC_134a(Time) ;
            C2H2F4_HFC_134a:FillValue = NaNf ;
```

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            C2H2F4_HFC_134a:units = "pnmol/mol" ;
            C2H2F4_HFC_134a:long_name = "AWAS C2H2F4 HFC-134a mixing ratio" ;
      float C2H4F2_HFC_152a(Time) ;
            C2H4F2_HFC_152a:FillValue = NaNf ;
            C2H4F2_HFC_152a:units = "pnmol/mol" ;
            C2H4F2_HFC_152a:long_name = "AWAS C2H4F2 HFC-152a mixing ratio" ;
      float CBrClF2_Halon_1211(Time) ;
            CBrClF2_Halon_1211:FillValue = NaNf ;
            CBrClF2_Halon_1211:units = "pnmol/mol" ;
            CBrClF2_Halon_1211:long_name = "AWAS CBrClF2 Halon 1211 mixing
ratio" ;
      float C2Br2F4_Halon_2402(Time) ;
            C2Br2F4_Halon_2402:FillValue = NaNf ;
            C2Br2F4_Halon_2402:units = "pnmol/mol" ;
            C2Br2F4_Halon_2402:long_name = "AWAS C2Br2F4 Halon 2402 mixing
ratio" ;
      float OCS_Carbonyl_sulfide(Time) ;
            OCS_Carbonyl_sulfide:FillValue = NaNf ;
            OCS_Carbonyl_sulfide:units = "pnmol/mol" ;
            OCS_Carbonyl_sulfide:long_name = "AWAS OCS Carbonyl sulfide mixing
ratio" ;
      float CH3Cl_Methyl_chloride(Time) ;
            CH3Cl_Methyl_chloride:FillValue = NaNf ;
            CH3Cl_Methyl_chloride:units = "pnmol/mol" ;
            CH3Cl_Methyl_chloride:long_name = "AWAS CH3Cl Methyl chloride mixing
ratio" ;
      float CH3Br_Methyl_bromide(Time) ;
            CH3Br_Methyl_bromide:FillValue = NaNf ;
            CH3Br_Methyl_bromide:units = "pnmol/mol" ;
            CH3Br_Methyl_bromide:long_name = "AWAS CH3Br Methyl bromide mixing
ratio" ;
      float CH3I_Methyl_iodide(Time) ;
            CH3I_Methyl_iodide:FillValue = NaNf ;
            CH3I_Methyl_iodide:units = "pnmol/mol" ;
            CH3I_Methyl_iodide:long_name = "AWAS CH3I Methyl iodide mixing
ratio" ;
      float CHCl3_Chloroform(Time) ;
            CHCl3_Chloroform:FillValue = NaNf ;
            CHCl3_Chloroform:units = "pnmol/mol" ;
            CHCl3_Chloroform:long_name = "AWAS CHCl3 Chloroform mixing ratio" ;
      float CH2Cl2_Methylene_chloride(Time) ;
            CH2Cl2_Methylene_chloride:FillValue = NaNf ;
            CH2Cl2_Methylene_chloride:units = "pnmol/mol" ;
            CH2Cl2_Methylene_chloride:long_name = "AWAS CH2Cl2 Methylene
chloride mixing ratio" ;
      float C2H4Cl2_1_2_Dichloroethane(Time) ;
            C2H4Cl2_1_2_Dichloroethane:FillValue = NaNf ;
            C2H4Cl2_1_2_Dichloroethane:units = "pnmol/mol" ;
            C2H4Cl2_1_2_Dichloroethane:long_name = "AWAS C2H4Cl2-1-2
Dichloroethane mixing ratio" ;
      float CH3CCl3_Methyl_chloroform(Time) ;
            CH3CCl3_Methyl_chloroform:FillValue = NaNf ;
            CH3CCl3_Methyl_chloroform:units = "pnmol/mol" ;
            CH3CCl3_Methyl_chloroform:long_name = "AWAS CH3CCl3 Methyl
chloroform mixing ratio" ;
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      float CCl4_Carbon_tetrachloride(Time) ;
            CCl4_Carbon_tetrachloride:FillValue = NaNf ;
            CCl4_Carbon_tetrachloride:units = "pnmol/mol" ;
            CCl4_Carbon_tetrachloride:long_name = "AWAS CCl4 Carbon
tetrachloride mixing ratio" ;
      float C2Cl4_Perchlorethylene(Time) ;
            C2Cl4_Perchlorethylene:FillValue = NaNf ;
            C2Cl4_Perchlorethylene:units = "pnmol/mol" ;
            C2Cl4_Perchlorethylene:long_name = "AWAS C2Cl4 Perchlorethylene
mixing ratio" ;
      float CH3ONO2_Methyl_nitrate(Time) ;
            CH3ONO2_Methyl_nitrate:FillValue = NaNf ;
            CH3ONO2_Methyl_nitrate:units = "pnmol/mol" ;
            CH3ONO2_Methyl_nitrate:long_name = "AWAS CH3ONO2 Methyl nitrate
mixing ratio" ;
      float C2H5ONO2_Ethyl_nitrate(Time) ;
            C2H5ONO2_Ethyl_nitrate:FillValue = NaNf ;
            C2H5ONO2_Ethyl_nitrate:units = "pnmol/mol" ;
            C2H5ONO2_Ethyl_nitrate:long_name = "AWAS C2H5ONO2 Ethyl nitrate
mixing ratio" ;
      float i-C3H7ONO2_Isopropyl_nitrate(Time) ;
            i-C3H7ONO2_Isopropyl_nitrate:FillValue = NaNf ;
            i-C3H7ONO2_Isopropyl_nitrate:units = "pnmol/mol" ;
            i-C3H7ONO2_Isopropyl_nitrate:long_name = "AWAS i-C3H7ONO2 Isopropyl
nitrate mixing ratio" ;
      float n-C3H7ONO2_n-propyl_nitrate(Time) ;
            n-C3H7ONO2_n-propyl_nitrate:FillValue = NaNf ;
            n-C3H7ONO2_n-propyl_nitrate:units = "pnmol/mol" ;
            n-C3H7ONO2_n-propyl_nitrate:long_name = "AWAS n-C3H7ONO n-propyl
nitrate mixing ratio" ;
      float C4H9ONO2_2-butyl_nitrate(Time) ;
            C4H9ONO2_2-butyl_nitrate:FillValue = NaNf ;
            C4H9ONO2_2-butyl_nitrate:units = "pnmol/mol" ;
            C4H9ONO2_2-butyl_nitrate:long_name = "AWAS C4H9ONO 2-butyl nitrate
mixing ratio" ;
      float C5H11ONO2_3-pentyl_nitrate(Time) ;
            C5H11ONO2_3-pentyl_nitrate:FillValue = NaNf ;
            C5H11ONO2_3-pentyl_nitrate:units = "pnmol/mol" ;
            C5H11ONO2_3-pentyl_nitrate:long_name = "AWAS C5H11ONO2 3-pentyl
nitrate mixing ratio" ;
      float C5H11ONO2_2-pentyl_nitrate(Time) ;
            C5H11ONO2_2-pentyl_nitrate:FillValue = NaNf ;
            C5H11ONO2_2-pentyl_nitrate:units = "pnmol/mol" ;
            C5H11ONO2_2-pentyl_nitrate:long_name = "AWAS C5H11ONO2 2-pentyl
nitrate mixing ratio" ;
      float C2H5Br_Ethyl_bromide(Time) ;
            C2H5Br_Ethyl_bromide:FillValue = NaNf ;
            C2H5Br_Ethyl_bromide:units = "pnmol/mol" ;
            C2H5Br_Ethyl_bromide:long_name = "AWAS C3H5Br Ethyl bromide mixing
ratio" ;
      float n-C3H7Br_n-propyl_bromide(Time) ;
            n-C3H7Br_n-propyl_bromide:FillValue = NaNf ;
            n-C3H7Br_n-propyl_bromide:units = "pnmol/mol" ;
            n-C3H7Br_n-propyl_bromide:long_name = "AWAS n-C3H7Br n-propyl
bromide mixing ratio" ;
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```
      float CH2Br2_Methylene_bromide(Time) ;
            CH2Br2_Methylene_bromide:FillValue = NaNf ;
            CH2Br2_Methylene_bromide:units = "pnmol/mol" ;
            CH2Br2_Methylene_bromide:long_name = "AWAS CH2Br2 Methylene bromide
mixing ratio" ;
      float CHBr2Cl_Dibromochloromethane(Time) ;
            CHBr2Cl_Dibromochloromethane:FillValue = NaNf ;
            CHBr2Cl_Dibromochloromethane:units = "pnmol/mol" ;
            CHBr2Cl_Dibromochloromethane:long_name = "AWAS CHBr2Cl
Dibromochloromethane mixing ratio" ;
      float CHBr3_Bromoform(Time) ;
            CHBr3_Bromoform:FillValue = NaNf ;
            CHBr3_Bromoform:units = "pnmol/mol" ;
            CHBr3_Bromoform:long_name = "AWAS CHBr3 Bromoform mixing ratio" ;
      float C2H6_Ethane(Time) ;
            C2H6_Ethane:FillValue = NaNf ;
            C2H6_Ethane:units = "pnmol/mol" ;
            C2H6_Ethane:long_name = "AWAS C2H6 Ethane mixing ratio" ;
      float C2H2_Ethyne(Time) ;
            C2H2_Ethyne:FillValue = NaNf ;
            C2H2_Ethyne:units = "pnmol/mol" ;
            C2H2_Ethyne:long_name = "AWAS C2H2 Ethyen mixing ratio" ;
      float C3H8_Propane(Time) ;
            C3H8_Propane:FillValue = NaNf ;
            C3H8_Propane:units = "pnmol/mol" ;
            C3H8_Propane:long_name = "AWAS C3H8 Propane mixing ratio" ;
      float C3H4_propyne(Time) ;
            C3H4_propyne:FillValue = NaNf ;
            C3H4_propyne:units = "pnmol/mol" ;
            C3H4_propyne:long_name = "AWAS C3H4 propyne mixing ratio" ;
      float i-C4H10_i-Butane(Time) ;
            i-C4H10_i-Butane:FillValue = NaNf ;
            i-C4H10_i-Butane:units = "pnmol/mol" ;
            i-C4H10_i-Butane:long_name = "AWAS i-C4H10 i-Butane mixing ratio" ;
      float n-C4H10_n-Butane(Time) ;
            n-C4H10_n-Butane:FillValue = NaNf ;
            n-C4H10_n-Butane:units = "pnmol/mol" ;
            n-C4H10_n-Butane:long_name = "AWAS n-C4H10 n-Butane mixing ratio" ;
      float i-C5H12_i-pentane(Time) ;
            i-C5H12_i-pentane:FillValue = NaNf ;
            i-C5H12_i-pentane:units = "pnmol/mol" ;
            i-C5H12_i-pentane:long_name = "AWAS i-C5H12 i-pentane mixing ratio"
;
      float n-C5H12_n_pentane(Time) ;
            n-C5H12_n_pentane:FillValue = NaNf ;
            n-C5H12_n_pentane:units = "pnmol/mol" ;
            n-C5H12_n_pentane:long_name = "AWAS n-C5H12 n pentane mixing ratio"
;
      float C5H8_Isoprene(Time) ;
            C5H8_Isoprene:FillValue = NaNf ;
            C5H8_Isoprene:units = "pnmol/mol" ;
            C5H8_Isoprene:long_name = "AWAS C5H8 Isoprene mixing ratio" ;
      float C6H6_Benzene(Time) ;
            C6H6_Benzene:FillValue = NaNf ;
            C6H6_Benzene:units = "pnmol/mol" ;
```

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            C6H6_Benzene:long_name = "AWAS C6H6 Benzene mixing ratio" ;
      float C7H8_Toluene(Time) ;
            C7H8_Toluene:FillValue = NaNf ;
            C7H8_Toluene:units = "pnmol/mol" ;
            C7H8_Toluene:long_name = "AWAS C7H8 Toluene mixing ratio" ;
      float C8H10_Ethyl_benzene(Time) ;
            C8H10_Ethyl_benzene:FillValue = NaNf ;
            C8H10_Ethyl_benzene:units = "pnmol/mol" ;
            C8H10_Ethyl_benzene:long_name = "AWAS C8H10 Ethyl benzene mixing
ratio" ;
      float C8H10_m+p_xylene(Time) ;
            C8H10_m+p_xylene:FillValue = NaNf ;
            C8H10_m+p_xylene:units = "pnmol/mol" ;
            C8H10_m+p_xylene:long_name = "AWAS C8H10 m+p xylene mixing ratio" ;
      float C8H10_o-xylene(Time) ;
            C8H10_o-xylene:FillValue = NaNf ;
            C8H10_o-xylene:units = "pnmol/mol" ;
            C8H10_o-xylene:long_name = "AWAS C8H10 o-xylene mixing ratio" ;
      float C3H6O2_Methyl_Acetate(Time) ;
            C3H6O2_Methyl_Acetate:FillValue = NaNf ;
            C3H6O2_Methyl_Acetate:units = "pnmol/mol" ;
            C3H6O2_Methyl_Acetate:long_name = "AWAS C3H6O2 Methyl Acetate mixing
ratio" ;
      float CH3CN_Acetonitrile(Time) ;
            CH3CN_Acetonitrile:FillValue = NaNf ;
            CH3CN_Acetonitrile:units = "pnmol/mol" ;
            CH3CN_Acetonitrile:long_name = "AWAS CH3CN Acetonitrile mixing
ratio" ;
      float C2H6S_Dimethylsulfide(Time) ;
            C2H6S_Dimethylsulfide:FillValue = NaNf ;
            C2H6S_Dimethylsulfide:units = "pnmol/mol" ;
            C2H6S_Dimethylsulfide:long_name = "AWAS C2H65 Dimethylsulfide mixing
ratio" ;
      float C5H12O_Methyl-t-butylether(Time) ;
            C5H12O_Methyl-t-butylether:FillValue = NaNf ;
            C5H12O_Methyl-t-butylether:units = "pnmol/mol" ;
            C5H12O_Methyl-t-butylether:long_name = "AWAS C5H120 Methyl-t-
butylether mixing ratio" ;

// global attributes:
            :flight = "rf01" ;
            :flight_date = "20080418" ;
            :source_GFS_merged = "start08_rf01_merged_final_v03" ;
            :source_AWAS = "start08_rf01_AWAS_final_v01.GV" ;
            :author = "Bill Hall" ;
            :email = "hallb@ucar.edu" ;
            :creation_date = "Thu Jul  2 10:44:23 2009" ;
}
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