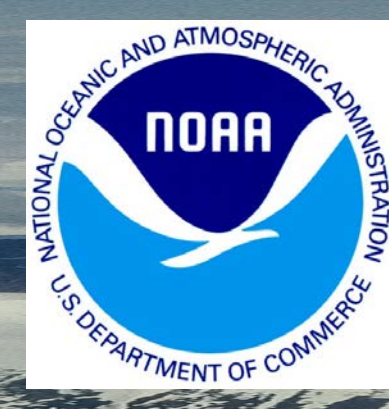


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# Datagrams: Alert

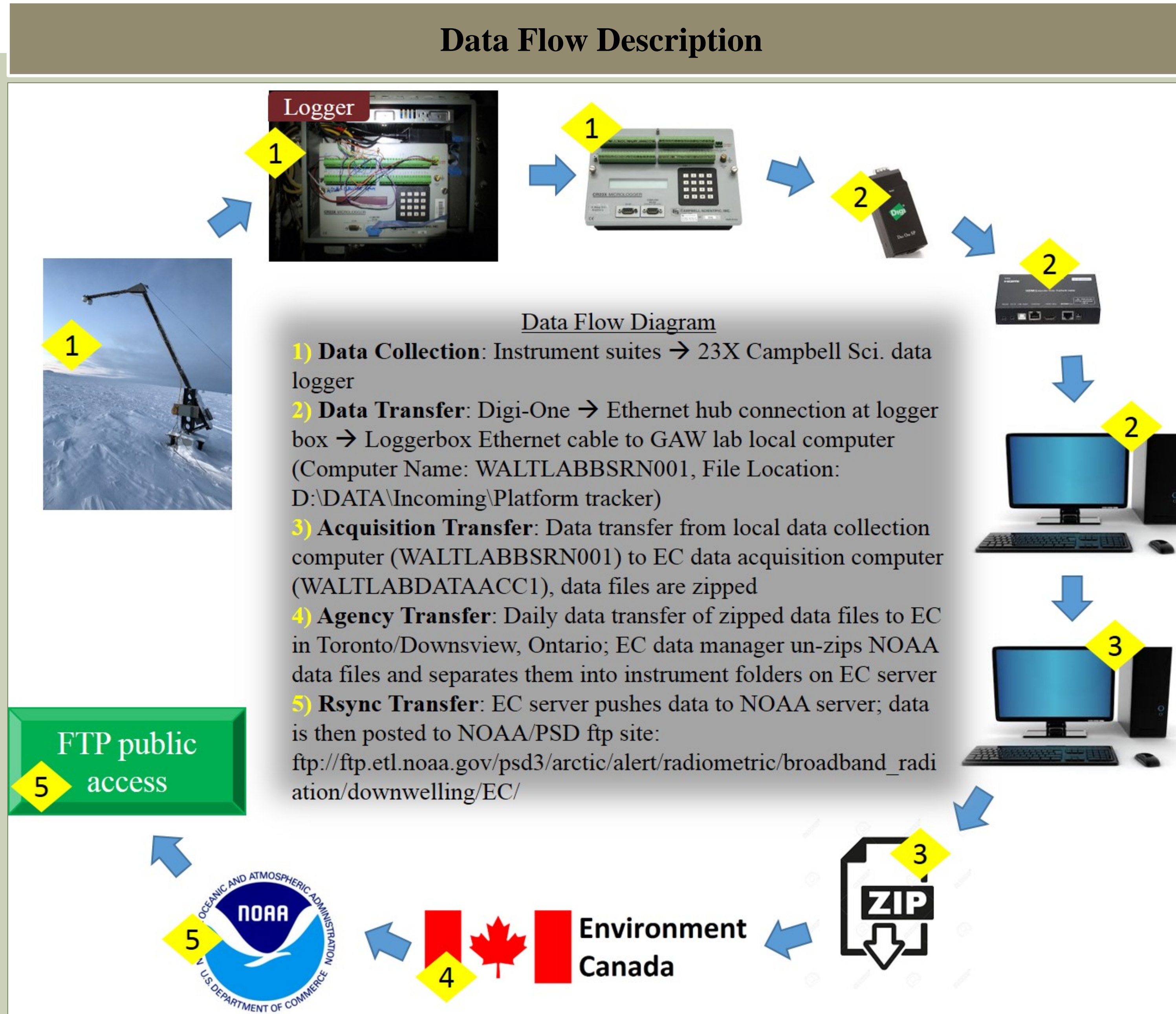
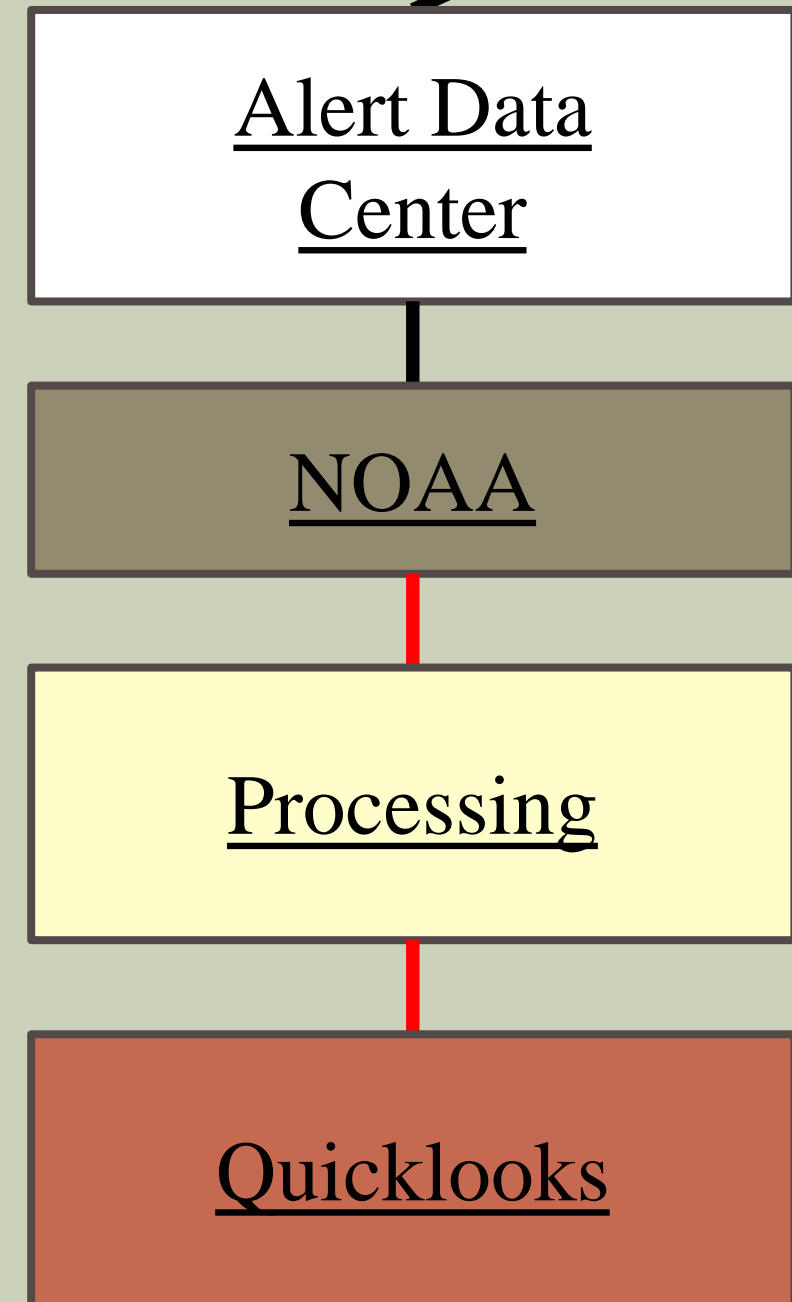


## EC Broadband Radiation Upwelling

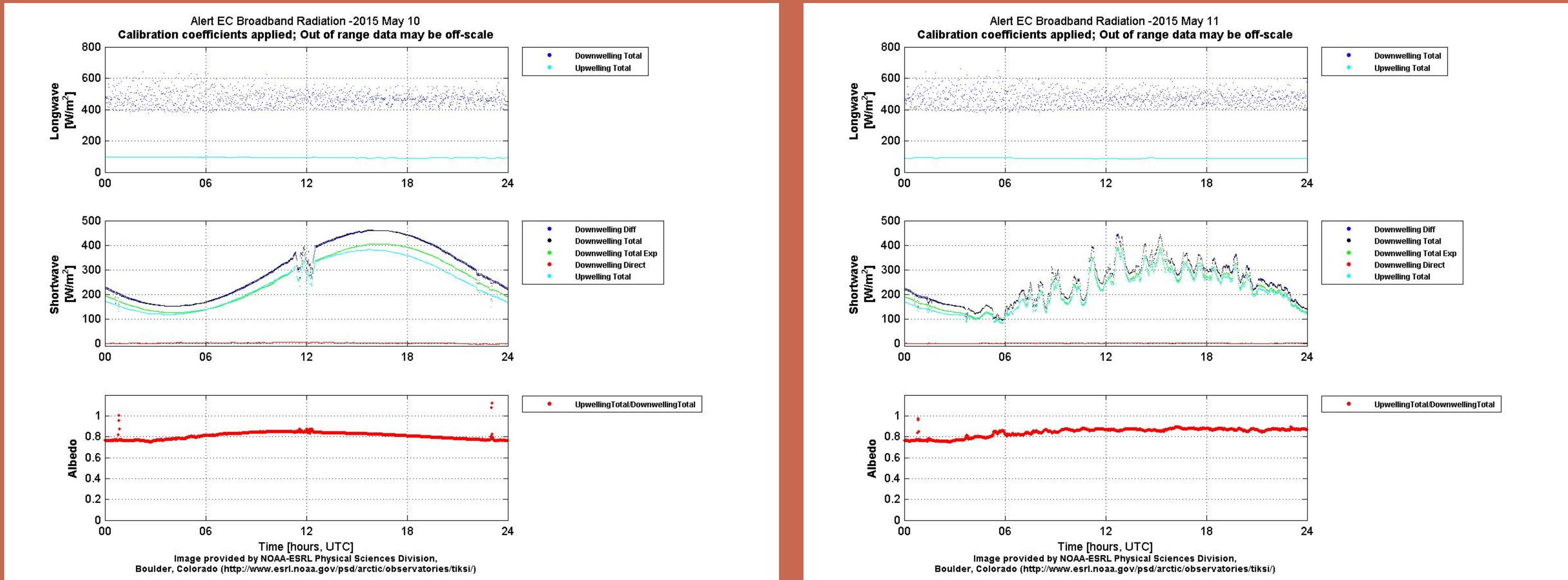
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File name: (as of 1/11/17) Alert EC Tipping Tower Albedo-YYYY-MM-DD.dat  
 File location on ingest Server: /home/alert/EC Tipping tower/

lineID	Year	Julian Day	GMT/UTC Time [HHMM]	Logger Battery Voltage	Logger Temp [degC]	Upwelling Longwave Total [mV]	Upwelling Longwave Total std	Upwelling Longwave Total Case Temp [degC]	Upwelling Longwave Total Case Temp [degC] [repeat]	Upwelling Shortwave Total [mV]	Upwelling Shortwave Total std	Upwelling Shortwave Total Case Temp [degC]
101	2014	358	53	13.38	-36.18	-0.48478	0.00045	798.8	798.8	-0.00405	0.00022	7.3135
101	2014	358	54	13.38	-36.17	-0.48546	0.00034	800.93	800.93	-0.0042	0.00016	7.3396



### Example Plots:



Files separated into individual raw files by instrument (locations below):  
 lineID 101: EC Broadband Radiation Upwelling **1 2**  
 ftp://ftp.etl.noaa.gov/psd3/arctic/alert/radiometric/broadband\_radiation/upwelling/EC/raw/

Folder Name	File Name	FTP Location
Raw	Platform tracker 23X-YYYY-MM-DD.dat	ftp://ftp.etl.noaa.gov/psd3/arctic/alert/radiometric/broadband_radiation/upwelling/EC/raw/
Ingest	altradiationmet.a1.YYYYMMDD.hhmss.txt	ftp://ftp.etl.noaa.gov/psd3/arctic/alert/radiometric/broadband_radiation/upwelling/EC/ingest/
Products	altradiationecbsrn.b1.YYYYMMDD.hhmss.txt	ftp://ftp.etl.noaa.gov/psd3/arctic/alert/radiometric/broadband_radiation/products/quality_controlled/
Quicklooks	altradiationecbsrn.a1.YYYYMMDD.hhmss.jpg	ftp://ftp.etl.noaa.gov/psd3/arctic/alert/radiometric/broadband_radiation/quicklooks/

**Home:**  
<http://www.esrl.noaa.gov/psd/iasoa/>  
**Data:**  
<http://www.esrl.noaa.gov/psd/iasoa/dataataglance>

**IASOA Portal**

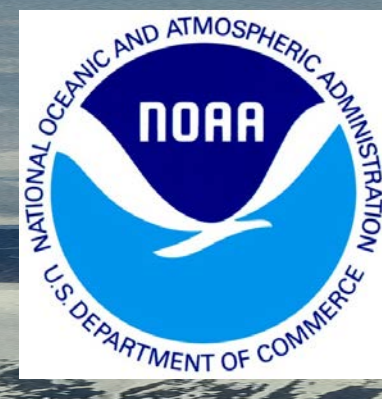
**Product**

### Example Product File:

DayFrac	Year	JulianDay	HourMin	SWDiffDownwelling [W/m2]	SWTotalDownwelling [W/m2]	SWDirDownwelling [W/m2]	LWTotalDownwelling [W/m2]	SWTotalDownwelling [W/m2]	SWTotalUpwelling [W/m2]	LWTotalUpwelling [W/m2]	Albedo	QualityControl
1	2015	1	0	-1.24508	-0.983069	0.154523	424.909	-2.52247	-0.712826	119.764	0.725103	0300043942440
1.00069	2015	1	1	-1.25055	-0.986243	0.130653	454.106	-2.55695	-0.68672	119.741	0.696298	0300043942440

Contacts

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 Sara Crepinsek  
 sara.crepinsek@noaa.gov



**Datagrams:  
Alert**



**EC Broadband Radiation Upwelling**

Contacts

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**Instrument Specifications**



<b>Instrument Details</b>		
Specifications	<b>1</b>	<b>2</b>
Measurement	Upwelling Shortwave Total	Upwelling Longwave Total
Serial #	090058	080068
Instrument Manufacturer	Kipp&Zonen CMP22	Kipp&Zonen CGR4
Type	Pyranometer (PSP)	Pyrgometer (PIR)
Special Notes	- Re-calibrated with swapped internal/external components in June 2014 - Internal/external components swapped with NOAA K&Z pyranometer model CM22 (SN030083) in March 2014 due to connector issue	
Height	5m	5m
Fan Included (y/n) If Yes, specify AC/DC fan	Yes; DC	Yes; DC
Case and Dome temps both measured (no/both/case/dome)	Case	Case
Dome Correction Factor? (value/Not Applicable)	no	no
Additional ventilation? (y/n/explain)	no	no
Heated/Aspirated? (y/n/both)	Heated, Aspirated	Heated, Aspirated
Is dome facing upward or downward?	Downward	Downward
Radiation measurement upwelling or downwelling?	Upwelling	Upwelling
Measurement Unit	mV	mV
Calibration factors	8.81 $\mu\text{V}/\text{W}/\text{m}^2$	11.10 $\mu\text{V}/\text{W}/\text{m}^2$
Unit after Applied Calibration or Conversion	$\text{W}/\text{m}^2$	$\text{W}/\text{m}^2$
Additional Corrections Applied (y/n/explain)		

**Processing**

**Calibration Values:**

1. Upwelling Shortwave Total (K&Z CMP22)	8.81 $\mu\text{V}/\text{W}/\text{m}^2$	06/01/2014 – present
	9.89 $\mu\text{V}/\text{W}/\text{m}^2$	09/30/2013 – 03/12/2014
2. Upwelling Longwave Total (K&Z CGR4)	11.10 $\mu\text{V}/\text{W}/\text{m}^2$	08/12/2008 – present

**Processing Conversions:**

Shortwave Radiation (#1)  
**DESCRIPTION:**  
 $\text{SW} = 1000 * \text{Recorded value} / \text{calibration coefficient}$

**UNITS:**  
 $\text{W}/\text{m}^2 = 1000 * \text{mV} / \mu\text{V}/\text{W}/\text{m}^2$

Longwave Radiation (#2)  
**DESCRIPTION:**  
 $\text{Sigma} = 5.6704\text{e-}8$ , Emissivity = 1, SF = calibration coefficient  
 $A = 0.0010295$   
 $B = 0.0002391$   
 $C = 0.0000001568$   
 $\text{LW\_case} = 1/(A+B*\ln(T\_case*1000)+C*\ln(T\_case*1000)^3)$   
 $\text{LW} = \text{SF} * \text{Recorded value} + \text{Sigma}(E(\text{LW\_case}^4) * (\text{LW\_case}^4))$

**UNITS:**  
 $\text{LW\_case\_mV} = 1/(A+B*\ln(\text{mV}*1000)+C*\ln(\text{mV}*1000)^3)$   
 $\text{W}/\text{m}^2 = (\text{mV}/\text{W}/\text{m}^2) * \text{mV} + \text{Sigma}(E(\text{LW\_case\_mV}^4) * (\text{LW\_case\_mV}^4))$

**Processing Quality Control Techniques:**

**Historical Quality Control Techniques:**  
 Long, C. N., & Shi, Y. (2008). *An Automated Quality Assessment and Control Algorithm for Surface Radiation Measurements*. OASJ, 2, 23-37. doi: 10.2174/1874282300802010023

Younkin, K., & Long, C. N. (2004). *Improved Correction of IR Loss in Diffuse Shortwave Measurements: An ARM Value Added Product*.

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