



CLIMATOLOGICAL DATA

MARYLAND AND DELAWARE

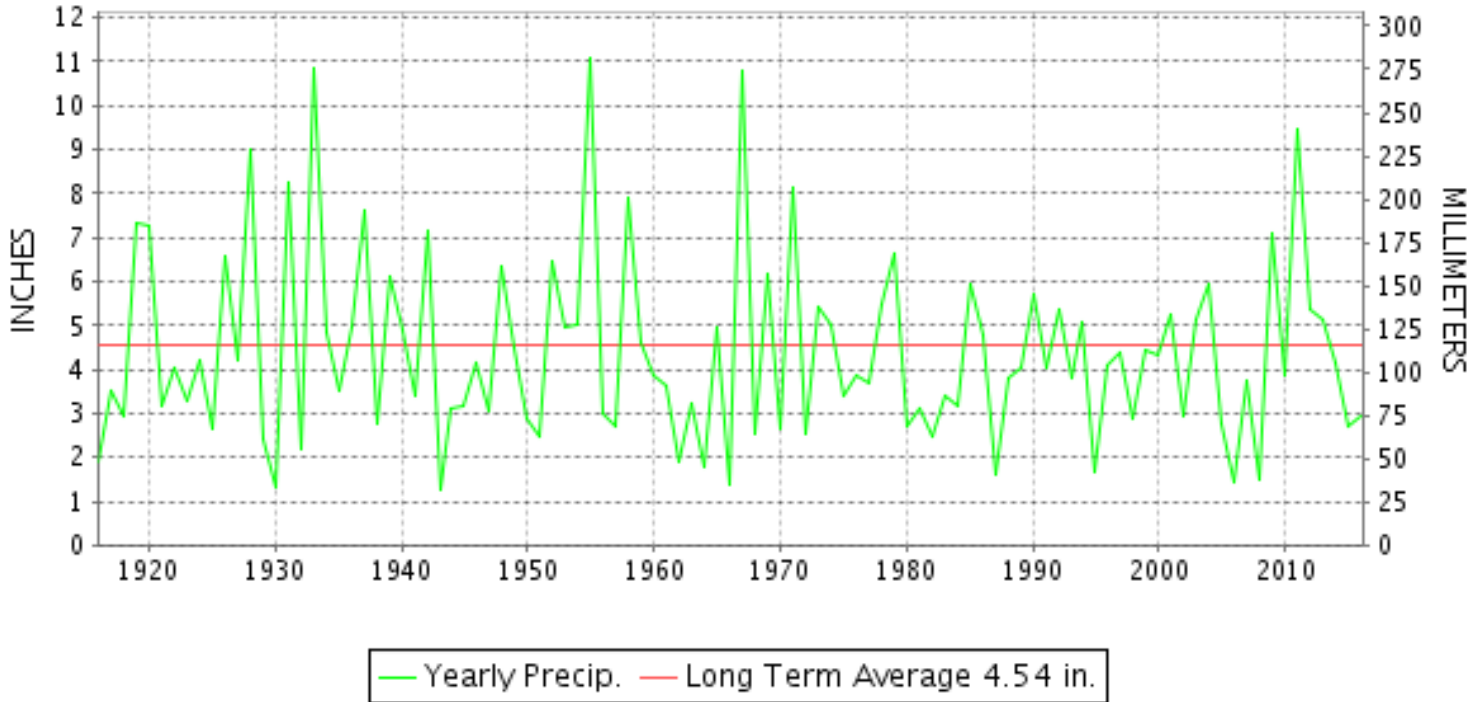
AUGUST 2016

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AUGUST PRECIPITATION BY YEAR



TEMPERATURE AND PRECIPITATION EXTREMES

MARYLAND

HIGHEST TEMPERATURE	100	AUGUST 14	DALECARLIA RSVR
LOWEST TEMPERATURE	49	AUGUST 24	SNOW HILL 4 N
GREATEST TOTAL PRECIPITATION	7.10		CYLBURN
LEAST TOTAL PRECIPITATION	1.01		SMITHSBURG 2NW
GREATEST 1 DAY PRECIPITATION	2.21	AUGUST 17	MARYLAND SCI CTR

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DELAWARE

HIGHEST TEMPERATURE	96	AUGUST 14++	3 STATIONS
LOWEST TEMPERATURE	56	AUGUST 23+	2 STATIONS
GREATEST TOTAL PRECIPITATION	2.84		DOVER
LEAST TOTAL PRECIPITATION	1.48		WILMINGTON PORTER RSCH
GREATEST 1 DAY PRECIPITATION	1.81	AUGUST 21	DOVER

DAILY PRECIPITATION (INCHES)

STATION	TOTAL	DAY OF MONTH																																
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
MARYLAND																																		
SOUTHERN																																		
EASTERN SHORE 01																																		
ASSATEAGUE	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
PRINCESS ANNE	M 1.83															0.98						0.85												
SALISBURY 2N	3.39	0.01	T				0.17	T		T						1.07		0.60	0.01				1.53											
SALISBURY FAA AP	2.70						T			0.02					0.04	0.80	0.76	0.02				1.06												
SNOW HILL 4 N	2.20	0.16								0.06	T					0.46		0.75					0.69	T						0.08				
CENTRAL																																		
EASTERN SHORE 02																																		
ROYAL OAK 2 SSW	1.93		0.17			T										0.47		0.67					0.62											
LOWER SOUTHERN 03																																		
MECHANICSVILLE 5 NE	3.27	T					0.08	0.02			0.09					1.08		1.04	T				0.96											
SOLOMONS	A 2.36	*	0.25 _a			*	*	0.07 _a	T	T		*	*	*	0.00 _a	0.67		0.80		*	*	0.57 _a				*	*	*	0.00 _a			T		
UPPER SOUTHERN 04																																		
BALTIMORE-WASHINGTON INTL AP	3.96	0.06	T										0.32		0.20	1.64		1.36					0.38									T		
BELTSVILLE	4.22							0.02							0.32	2.06		0.80						1.02										
DALECARLIA RSVR	M 2.18	0.05														1.55	0.09	-					0.49											
MARYLAND SCI CTR	4.11											0.04		0.15	0.97		2.21					0.40										0.34		
NATL ARBORETUM DC	2.68	0.48	T					T			T					0.70	0.02	0.87					0.61											
OXON HILL	2.83	0.01				0.05	0.27				T					0.73		0.56					1.21											
UPPER MARLBORO 3 NNW	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
NORTHERN																																		
EASTERN SHORE 05																																		
STEVENSVILLE 2SW	3.91		0.99	0.01												0.39	0.23		0.49	0.02				1.78										
SUDLERSVILLE 1S	3.06	T					0.13	T								0.30	0.23		0.40				2.00										T	
NORTHERN CENTRAL 06																																		
ABERDEEN PHILLIPS FLD	3.24		0.46					0.15			T					0.39	0.27		0.42	0.67				0.88										
BRIGHTON DAM	2.51		0.02													0.20	1.28	0.83					0.16	0.02										
CONOWINGO DAM	F 2.09		0.00 ^Z											0.04		0.15	0.41	0.43	0.11				0.95											
CYLBURN	MA 7.10	*	4.07 _a													*	1.93 _a	-	*	*	*	1.10 _a												
DAMASCUS 3 SSW	2.98			0.01		T	T					0.40		0.65	0.32	0.07	1.31	0.12					0.10											
EMMITSBURG 2 SE	2.35		1.01					T					0.10	T	0.01	0.24	0.04	0.75					0.20											
FREDERICK 2 NNE	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
MILLERS 4 NE	3.89	1.16	0.11	0.17			0.47									0.14	0.62		0.28	0.01			0.55	T										
SMITHSBURG 2NW	1.01														0.20	0.18	0.08	0.20	0.35															
APPALACHIAN																																		
MOUNTAIN 07																																		
CUMBERLAND 2	3.71	0.21					0.60	0.05				0.25		0.09		0.03	1.63	0.21	0.35				0.25										0.04	
FROSTBURG 2	2.34	0.02					0.57	0.15				0.35				0.07	0.01	0.55	0.19	0.01	0.08	T	0.08										0.26	
SHARPSBURG 5 S	A 2.62	0.22					*	*		*	0.04 _a					T	0.42	0.60	1.29				0.05											
WILLIAMSPORT	M	0.05			-	-	0.14																0.15											

DAILY PRECIPITATION (INCHES)

STATION	TOTAL	DAY OF MONTH																															
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
ALLEGHENY PLATEAU 08																																	
OAKLAND 1 SE	4.00	0.50					0.20		0.20			0.04	0.05			0.10	0.02	0.54	0.19	0.24		0.70	0.35					0.25			0.60	0.02	
SAVAGE RIVER DAM	1.83	0.06					0.50					0.72			0.08		0.15	0.07					0.20							0.05			
SINES DEEP CREEK	MA 3.43	0.65 _a					*	*	0.20 _a			0.07	0.02	*	*	0.46 _a	0.31	0.64	0.42	0.17	-	-	-				0.12	*	*	0.37 _a			
DELAWARE																																	
NORTHERN 01																																	
WILMINGTON NEW CASTLE CO AP	1.55	T		T			T			T		0.05			T	0.10	T	0.21	0.07			1.01				T					0.11		
WILMINGTON PORTER RSCH	1.48	0.11								0.08	T				0.07	0.02	0.13	0.58				0.42									0.07		
SOUTHERN 02																																	
DOVER	2.84	0.05					0.03				0.01					0.17		0.77				1.81											

DAILY TEMPERATURES (°F)

STATION	OB. TIME	MAX/MIN	DAY OF MONTH																															AVERAGE
			01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
ABERDEEN PHILLIPS FLD	07	MAX	89	85	85	82	83	83	89	87	83	84	90	92	93	95	96	90	92	90	86	88	88	83	81	81	83	85	93	88	86	88	88	87.3
		MIN	73	71	69	66	63	68	66	66	66	66	66	77	79	80	80	71	70	73	74	68	67	64	64	56	56	58	64	69	67	68	68	65
BRIGHTON DAM	08	MAX	87	88	88	88	81	91	87	86	84	81	90	91	91	93	94	91	90	88	86	87	86	81	81	81	83	86	90	87	88	88	85	87.0
		MIN	70	70	67		70	65	62	72	63	68	73	80	75	75	69	69	69	72	66	66	65	74	73	57	63	64	69	65	64	64	74	68.4
CONOWINGO DAM	07	MAX	86	81	83	81	82	82	88	85	81	85	88	92	94	94	95	90	90	88	87	86	87	80	81	79	83	84	90	88	84	88	86	86.1
		MIN	71	70	65	63	64	68	65	67	66	67	67	75	77	76	73	72	72	72	69	68	67	65	58	57	61	66	69	67	66	65	65	67.5
CYLBURN	08	MAX	93	86	88	79	80	80	87	83	80	80	89	93	94	95	94	93	94	88	93	92	95	91	79	80	84	87	90	93	92	95	84	88.1
		MIN	74	74	67	65	65	72	66	66	66	68	77	78	79	81	74	76	79	75	75	73	81	66	60	62	63	69	72	72	75	67	66	71.1
DAMASCUS 3 SSW	22	MAX	86	83	79	81	79	86	84	79	76	90	92	91	91	92	88	91	87	85	83	85	83	79	80	83	87	88	86	84	86	85	86	85.0
		MIN	68	69	66	63	65	72	62	63	62	72	74	75	74	72	68	70	70	70	64	66	69	61	59	62	65	73	67	67	66	63	64	67.1
EMMITSBURG 2 SE	07	MAX	88	86	84	83	84	80	90	86	82	78	90	92	94	95	92	93	79	89	88	90	89	83	82	83	86	89	93	90	90	92	90	87.4
		MIN	69	66	67	63	63	67	63	64	63	62	74	75	74	75	69	69	72	70	66	65	64	63	54	54	57	63	65	65	66	66	60	65.6
FREDERICK 2 NNE	07	MAX																																M
		MIN																																M
MILLERS 4 NE	18	MAX	85	85	82	82	80	86	85	83	79	88	91	93	94	92	90	88	87	86	85	86	84	79	81	82	86	89	87	85	89	87	87	85.9
		MIN	68	64	62	60	63	70	60	64	61	73	73	73	74	75	69	70	72	70	65	63	68	62	53	57	64	71	64	66	64	62	62	65.9
SMITHSBURG 2NW	08	MAX	83	85	86	83	83	87	87	86	82	77	90	92	92	94	91	89	90	87	86	87	88	83	80	82	86	89	89	89	90	90	87	86.8
		MIN	67	65	65	63	63	68	57	57	61	65	72	74	72	73	67	67	68	69	62	62	64	57	53	53	60	68	62	62	64	65	62	64.1
APPALACHIAN MOUNTAIN 07																																		
CUMBERLAND 2	07	MAX	87	90	89	83	83	84	89	87	84	81	95	95	97	98	94	92	95	90	90	90	90	83	83	85	90	94	91	93	94	93	90	89.6
		MIN	70	66	67	71	66	67	59	59	61	65	68	74	74	75	67	67	73	68	64	65	66	62	58	58	60	68	66	67	66	62	61	65.8
FROSTBURG 2	07	MAX	83	80	82	75	76	78	80	79	77	72	89	89	87	91	85	82	86	82	80	83	81	73	74	80	85	85	84	88	89	84	85	82.1
		MIN	65	64	64	65	62	64	57	58	58	63	66	66	70	71	64	65	67	64	64	62	62	57	54	54	57	65	62	63	62	59	59	62.4
SHARPSBURG 5 S	07	MAX	86	88	87	83	84	83	89	86	82	78	91	93	96	96	94	91	92	90	87	88	89	85	81	83	87	90	92	90	89	90	87	88.0
		MIN	68	68	66	64	64	68	58	58	61	64	71	71	73	72	67	67	68	69	62	63	63	58	55	55	60	66	64	64	64	60	60	64.2
ALLEGHENY PLATEAU 08																																		
OAKLAND 1 SE	07	MAX	83	83	83	75	77	82	79	82	79	78	89	90	90	91	87	89	87	84	83	85	80	73	77	78	84	82	87	84	89	84	86	83.2
		MIN	64	63	64	66	63	64	65	55	60	65	66	68	68	69	64	64	69	66	64	64	64	60	54	55	55	66	64	64	63	58	55	62.9
SAVAGE RIVER DAM	08	MAX	84	84	84	75	77	81	84	81	78	77	80	83	90	91	86	88	86	84	84	82	83	76	78	79	83	86	89	87	88	89	87	83.4
		MIN	65	65	64	68	64	64	58	58	59	62	67	71	70	72	65	65	70	67	64	63	64	57	55	55	56	64	65	66	65	60	58	63.4
SINES DEEP CREEK	07	MAX	81	79	81	76	76				79	77	78	81	81			87	83	82	79	78			72	76	80	80			86	81	81	79.7
		MIN	65	61	61	63	59				54	54	58	62	66			62	61	65	65	60			51	51	52	61			61	55	53	59.1
DELAWARE NORTHERN 01																																		
WILMINGTON NEW CASTLE CO AP	24	MAX	83	82	83	82	83	90	89	85	86	90	93	95	96	96	94	91	90	89	90	90	87	83	83	85	86	93	92	88	94	90	88	88.6
		MIN	74	69	64	64	65	75	67	67	68	75	78	79	81	79	73	75	75	74	70	68	70	62	56	63	67	72	68	66	68	68	64	69.8
WILMINGTON PORTER RSCH	24	MAX	81	78	79	81	81	87	85	83	88	89	93	94	96	93	90	91	87	84	87	88	85	79	78	84	85	89	88	88	90	87	88	86.3
		MIN	72	68	63	63	64	72	68	68	67	73	74	77	78	77	73	72	72	70	69	68	70	64	56	62	64	64	71	67	68	68	67	68.7
SOUTHERN 02																																		
DOVER	16	MAX	87	86	83	83	85	89	87	88	88	92	94	94	96	96	95	95	93	90	88	87	89	82	83	84	86	91	90	86	90	90	88	88.9

DAILY TEMPERATURES (°F)

STATION	OB. TIME	MAX/MIN	DAY OF MONTH																															AVERAGE
			01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
		MIN	76	72	67	66	65	72	70	68	66	73	77	78	80	75	73	73	78	70	70	69	72	65	59	62	66	73	69	69	67	69	69	70.3

SNOWFALL AND SNOW ON GROUND (INCHES)

STATION		DAY OF MONTH																															
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
MARYLAND SOUTHERN EASTERN SHORE 01 ASSATEAGUE PRINCESS ANNE SALISBURY 2N SALISBURY FAA AP SNOW HILL 4 N	SNOWFALL SNOWFALL SNOWFALL SNOWFALL SN ON GND SNOWFALL																																
DELAWARE NORTHERN 01 WILMINGTON NEW CASTLE CO AP WILMINGTON PORTER RSCH	SNOWFALL SN ON GND SNOWFALL SN ON GND																																

Snowfall: Includes snow and ice. Values for NWS stations (J index note) are Mid-Mid (LST).
 Snow on ground: Includes snow, sleet, ice, and hail. Values for NWS stations (J index note) are observed at 12 UTC (GMT).
 Water Equivalent: Given for NWS stations (J index note) only, when snow depth is 2 inches or more, and is measured at 18 UTC (GMT)

PAN EVAPORATION AND WIND

STATION		DAY OF MONTH																															TOTAL OR AVERAGE
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
MARYLAND UPPER SOUTHERN 04 BELTSVILLE	WIND	27	29	39	31	28	64	50	29	26	28	86	88	54	90	43	36	61	49	38	36	24	46	46	21	48	40	35	27	21	31	16	1287
	EVAP	0.19	0.19	0.21	0.17	0.23	0.13	0.25	0.25	0.15	0.04	0.26	0.35	0.23	0.35	0.34	0.45	0.23	0.35	0.23	0.20	0.24	0.23	0.25	0.21	0.20	0.19	0.25	0.23	0.21	0.17	0.26	7.24
	MAX	95	95	94	90	84	86	95	95	90	81	93	96	96	101	98	100	96	95	94	93	94	89	87	91	90	92	97	96	95	96	96	93.3
	MIN	72	72	67	66	67	68	64	64	62	62	62	74	75	76	70	69	69	72	70	70	69	63	61	62	64	65	72	68	68	70	65	67.7
UPPER MARLBORO 3 NNW	WIND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M
	EVAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M
	MAX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M
	MIN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M
ALLEGHENY PLATEAU 08 SAVAGE RIVER DAM	WIND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M
	EVAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M
	MAX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	MIN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M

Evaporation: Is measured in hundreths of inches.

Wind: Is measured in miles.

Max and Min: The maximum and minimum temperatures (Fahrenheit) of the water in the evaporation pan.

STATION INDEX

STATION	INDEX NO.	DIVISION	COUNTY	LATITUDE	LONGITUDE	ELEVATION (IN FEET)	OBSERVATION TIME AND TABLES			
							LOCAL STD TIME			
							TEMP	PRECIP	EVAP	SPECIAL SEE (NOTES)
MARYLAND										
ABERDEEN PHILLIPS FLD	0015	06	HARFORD	39 28	76 10W	57	07	07		CH
ASSATEAGUE	0335	01	WORCESTER	38 4	75 13W	10	VAR	VAR		H
BALTIMORE-WASHINGTON INTL AP R	0465	04	ANNE ARUNDEL	39 10	76 41W	156	24	24		HJ
BELTSVILLE	0700	04	PRINCE GEORGE'S	39 2	76 56W	145	08	08	08	CH
BRIGHTON DAM	1125	06	MONTGOMERY	39 11	77 0W	330	08	08		H
CONOWINGO DAM	2060	06	HARFORD	39 39	76 11W	40	07	07		H
CUMBERLAND 2	2282	07	ALLEGANY	39 39	78 45W	730	07	07		H
CYLBURN	2308	06	BALTIMORE	39 21	76 39W	235	08	08		H
DALECARLIA RSVR	2325	04	DISTRICT OF COLUMBIA	38 56	77 7W	150	08	08		H
DAMASCUS 3 SSW	2336	06	MONTGOMERY	39 16	77 14W	700	22	22		H
EMMITSBURG 2 SE	2906	06	FREDERICK	39 41	77 17W	403	07	07		H
FREDERICK 2 NNE	3353	06	FREDERICK	39 26	77 24W	280	07	07		H
FROSTBURG 2	3415	07	ALLEGANY	39 40	78 56W	2170	07	07		H
MARYLAND SCI CTR R	5718	04	BALTIMORE (CITY)	39 17	76 37W	20	24	24		H
MECHANICSVILLE 5 NE	5865	03	ST. MARY'S	38 28	76 42W	100	07	07		H
MILLERS 4 NE	5934	06	CARROLL	39 43	76 48W	860	18	18		CH
NATL ARBORETUM DC	6350	04	DISTRICT OF COLUMBIA	38 55	76 58W	50	08	08		H
OAKLAND 1 SE	6620	08	GARRETT	39 25	79 24W	2420	07	07		H
OXON HILL	6800	04	PRINCE GEORGE'S	38 47	76 60W	120	07	07		H
PRINCESS ANNE	7330	01	SOMERSET	38 13	75 41W	20	17	17		H
REISTERSTOWN 2 NW	7580	06	BALTIMORE	39 30	76 50W	737	08	08		H
ROYAL OAK 2 SSW	7806	02	TALBOT	38 43	76 11W	10	17	17		H
SALISBURY 2N	8004	01	WICOMICO	38 24	75 36W	20	17	17		H
SALISBURY FAA AP	8005	01	WICOMICO	38 20	75 31W	48	24	24		H
SAVAGE RIVER DAM	8065	08	GARRETT	39 31	79 8W	1495	08	08	08	CH
SHARPSBURG 5 S	8207	07	WASHINGTON	39 24	77 43W	500	07	07		H
SINES DEEP CREEK	8315	08	GARRETT	39 31	79 25W	2040	07	07		H
SMITHSBURG 2NW	8371	06	WASHINGTON	39 40	77 35W	670	08	08		H
SNOW HILL 4 N	8380	01	WORCESTER	38 14	75 23W	30	17	17		H
SOLOMONS	8405	03	CALVERT	38 19	76 27W	12	08	08		H
STEVENSVILLE 2SW	8557	05	QUEEN ANNE'S	38 58	76 20W	10	07	07		H
SUDLERSVILLE 1S	8657	05	QUEEN ANNE'S	39 10	75 51W	100		20		H
UPPER MARLBORO 3 NNW	9070	04	PRINCE GEORGE'S	38 51	76 46W	130	08	08	08	H
WILLIAMSPORT	9570	07	WASHINGTON	39 37	77 51W	360		06		H
DELAWARE										
DOVER	2730	02	KENT	39 9	75 30W	30	16	16		H
WILMINGTON NEW CASTLE CO AP R	9595	01	NEW CASTLE	39 40	75 36W	79	24	24		HJ
WILMINGTON PORTER RSCH	9605	01	NEW CASTLE	39 46	75 32W	270	24	24		H

REFERENCE NOTES

STATION NAMES: Name of the city, town or locality. Figures and letters following the station names indicate the distance in miles and direction from the post office or town community center.

DIVISIONS: Areas within a state of similar climatological characteristics. Division averages are calculated using data from stations that record temperature and/or precipitation. Station Precipitation totals flagged with an 'F' or 'M' are excluded from the Divisional Average calculations of precipitation. Stations with monthly Temperature averages flagged with an 'F' or 'M' are included in the Divisional Average if there are no more than 9 flagged or missing daily values in the month, else they are excluded from the divisional average for temperature.

NORMALS: The average value of the meteorological element over a time period. Effective 1 January 2012, the averaging period for station departures is 1981 to 2010. The normals for National Weather Service localities have been adjusted so as to be representative for the current observation site.

The January 2011 through December 2015 publications incorrectly state the computation of divisional departures. Climate Division departures have been, and continue to be, computed from 1971-2000 Normals, not 1981-2010 as stated. Station departures are accurately described as departures from 1981-2010.

MONTHLY DEGREE DAY TOTALS: One heating (cooling) degree day is accumulated for each whole degree that the daily mean temperature is below (above) 65 degrees Fahrenheit.

PRECIPITATION: Values shown in hundredths of inches are water equivalent totals, i.e., total of liquid and melted frozen precipitation. In the "Monthly Summarized Data" table the total snow and sleet values shown in tenths of inches are unmelted amounts. The max depth on ground values of snow and sleet shown in whole inches are cumulative unmelted amounts. The number of days with .10, .50, 1.00 or more refers to water equivalents.

PRECIPITATION QUALITY CONTROL: The NCEI quality control process may flag precipitation data that are spatially inconsistent, exceed climatological limits, or are inconsistent with prevailing weather patterns.

TEMPERATURE: Original temperature values are given in the "Daily Temperature" table. Summary temperature information (averages, departures, extremes, monthly degree day totals) is based on the values labeled MAX/MIN.

WIND: (As shown in the "Evaporation and Wind" table) the total wind movement in miles over the evaporation pan as determined by an anemometer recorder located 6-8 inches above the pan.

SYMBOLS AND LETTERS USED IN THE STATION INDEX TABLE

C Station is equipped with recording rain gage (R) but values in this bulletin are from a non-recording rain gage unless indicated by an R.

G Observations appear in the "Soil Temperatures" table.

H Observations appear in the "Snowfall and Snow on the Ground" table.

J Station also published as a Local Climatological Data publication.

VAR Observation time varies.

SR / SS Observation time near sunrise / Observation time near sunset, respectively.

SYMBOLS AND LETTERS USED IN THE DATA TABLES

(DAILY DATA ARE FOR THE 24 HOURS IMMEDIATELY PRECEDING OBSERVATION TIME.)

BLANK Entries in the "Monthly Summarized Data" table indicate no record.

BLANK Entries in the "Daily Precipitation" and "Snowfall and Snow on the Ground" tables indicate zero.

BLANK Entries in the "Daily Temperature" table indicate a missing record

- No record. Data not recorded or not received in time for publication.

+ Precipitation or temperature extremes occurred on one or more previous dates during the month.

* Rain gage not read. Precipitation is included in the amount following the asterisks.

Time distribution may not be known. A * preceding the monthly total indicates precipitation amount is being carried forward to next month's total, and may include amounts from the previous month(s).

a As a subscript, indicates accumulated total.

A Amount of precipitation is the total of observer's entries for the current month. It may include precipitation that occurred during the previous month. Refer to earlier bulletin to determine date of last

reading. (Hawaii stations)

B Divisional Departure from normals are computed using 1971-2000 normals.

E Normalized HDD/CDD Calculation. E is appended to the HDD/CDD Calculation when 1-9 individual daily TMAX and/or TMIN values are missing and a Normalized HDD/CDD Calculation is provided. M appears alone if 10 or more daily values are missing.

F Monthly calculation flagged value. F is appended to average and/or total values computed which exclude one or more daily data values that have been flagged by the GHCN-Daily Dataset

M Insufficient or partial data. M is appended to average and/or total values computed with 1-9 daily values missing. M appears alone if 10 or more daily values are missing, (8 or more for wind and evaporation).

N Indicates snow fall or Snowdepth totals are computed with one or more missing days.

R Amounts from recording rain gage.

T Trace. An amount too small to measure.

SEASONAL TABLES: Monthly and seasonal snowfall and heating degree days for the 12 months ending with the June data are published in the July issue of this bulletin. Cooling degree days for the calendar year are published in the "Climatological Data Annual Summary."

Information concerning the history of changes in locations, exposure, etc. of substations is kept on file at the National Centers for Environmental Information. Historical information of regular National Weather Service Offices may be obtained from the "Local Climatological Data" annual publication. The contents of this publication may be reprinted or otherwise used freely, with proper credit to the National Centers For Environmental Information. The data are also available digitally.

Effective with the January 2011 Data-Month, COOP Observer Names are no longer included in the Monthly and Annual Climatological Data Publications. This information is not published to ensure the privacy of personal information pursuant to Section 208 of the E-Government Act of 2002 (44 USC 3601).

As of the 2011 Data-Year, Station and Climate Division Maps are no longer being included in the CD Publications. NCEI's Products Branch provides updated Station Maps for various data networks via the Historical Observing Metadata Repository: <http://www.ncdc.noaa.gov/homr>.

The GHCN-Daily Quality Control Flags shown below are displayed as superscripts with the data. For more information on Global Historical Climatology Network - Daily and flags, see: <http://www.ncdc.noaa.gov/oa/climate/ghcn-daily/> and Comprehensive Automated Quality Assurance of Daily Surface Observations. Durre, Imke, Matthew J. Menne, Byron E. Gleason, Tamara G. Houston, Russell S. Vose, 2010: J. Appl. Meteor. Climatol., 49, 16151633. doi: 10.1175/2010JAMC2375.1

Blank = Passed All checks

D = failed duplicate check

G = failed gap check

I = failed internal consistency check

K = failed streak/frequent-value check

L = failed check on length of multiday period

M = failed megaconsistency check

N = failed naught check

O = failed climatological outlier check

R = failed lagged range check

S = failed spatial consistency check

T = failed temporal consistency check

W = temperature too warm for snow

X = failed bounds check

Z = flagged as a result of an official Datzilla investigation

Beginning with the January 2013 CD Publication, monthly mean temperature calculations have changed to the National Data Stewardship Team standard. Monthly maximum and minimum temperatures are not rounded until after the monthly mean temperature is calculated. This is the most accurate outcome, but may be slightly different from the mean derived from rounded monthly maximum and minimum.

The climate division temperature and precipitation values in this publication are based on simple averages from the current set of NWS-Designated Open and Published COOP and First Order Sites within each division. These values differ from those found in NCEI's nClimDiv product. Beginning in February 2014, the nClimDiv product is used by NCEI's Monitoring Branch and in its monthly climate reports. For more details on nClimDiv, please go to <http://www.ncdc.noaa.gov/monitoring-references/maps/us-climate-divisions.php>.

Effective January 2016, Alaska's Climate Divisions are updated to reflect the 13 climate divisional boundaries established by University of Alaska-Fairbanks, NWS, NCEI, Oregon State University, and University of Nebraska-Lincoln. For more details regarding the updated Alaska Climate Divisions, see: <http://journals.ametsoc.org/doi/pdf/10.1175/JAMC-D-11-0168.1> (Bienek et al., 2012).

These and other publications are available from the National Centers for Environmental Information

Hourly Precipitation Data

This publication contains hourly precipitation amounts obtained from recording rain gages located at National Weather Service, Federal Aviation Administration, and cooperative observer stations. Published data are displayed in inches and tenths or inches and hundredths at local standard time. HPD includes maximum precipitation for nine (9) time periods from 15 minutes to 24 hours, for selected stations.

Climatological Data

Monthly editions contain station daily maximum and minimum temperatures and precipitation. Some Stations provide daily snowfall, snow depth, evaporation, and soil temperature data. Each edition also contains monthly summaries for heating and cooling degree days (65 degree F base). The July issue contains a recap of monthly heating degree days and snow data for the preceding July through June.

The Annual issue contains monthly and annual averages of temperature, precipitation, temperature extremes, freeze data, soil temperatures, evaporation, and a recap of monthly cooling degree days.

Storm Data

Monthly issues contain a chronological listing, by states, of occurrences of storms and unusual weather phenomena. Reports contain information on storm paths, deaths, injuries, and property damage. An "Outstanding storms of the month" section highlights severe weather events with photographs, illustrations, and narratives. The December issue includes annual tornado, lightning, flash flood, and tropical cyclone summaries.

Monthly Climatic Data for the World

This publication contains monthly means for temperature, pressure, precipitation, vapor pressure, and sunshine for approximately 2,000 surface data collection stations worldwide and monthly mean upper air temperatures, dew point depressions, and wind velocities for approximately 500 observing sites.

Local Climatological Data

LCD publications summarize temperature, relative humidity, precipitation, cloudiness, wind speed and direction observations for several hundred cities in the U.S. and its territories. Each monthly publication also contains 3 hourly weather observations for that month and a hourly summary of precipitation. Annual LCD publications contain a summary of the past calendar year as well as historical averages and extremes.

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