

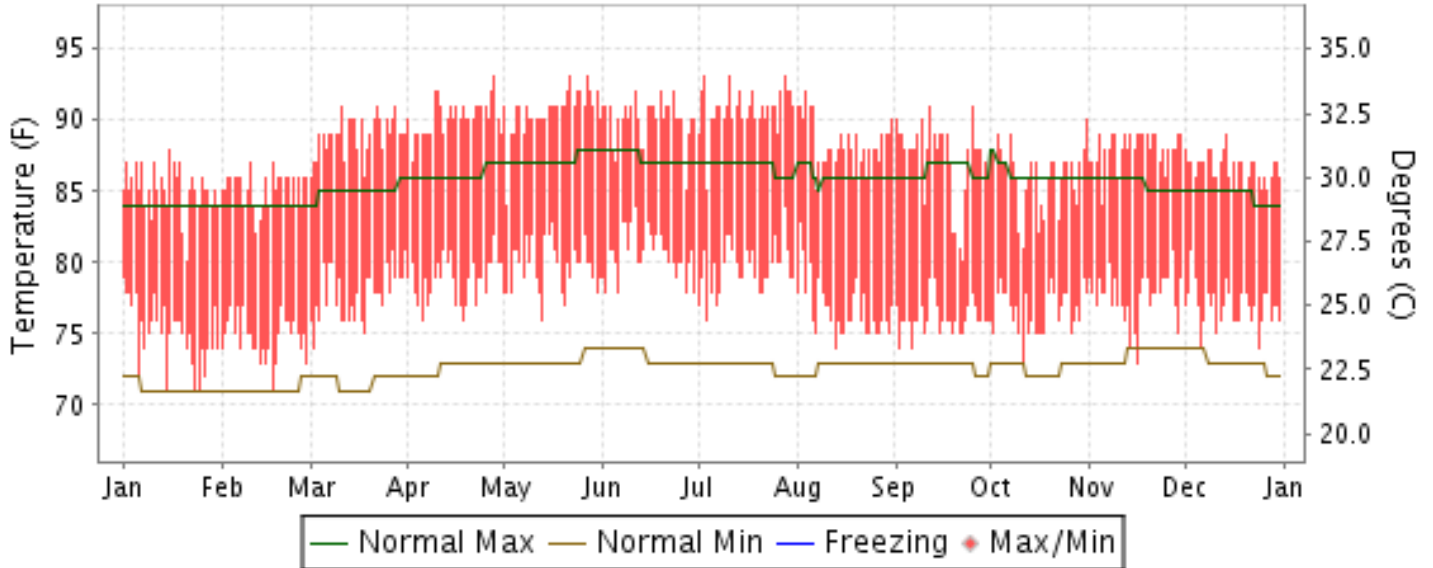


# 2013 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

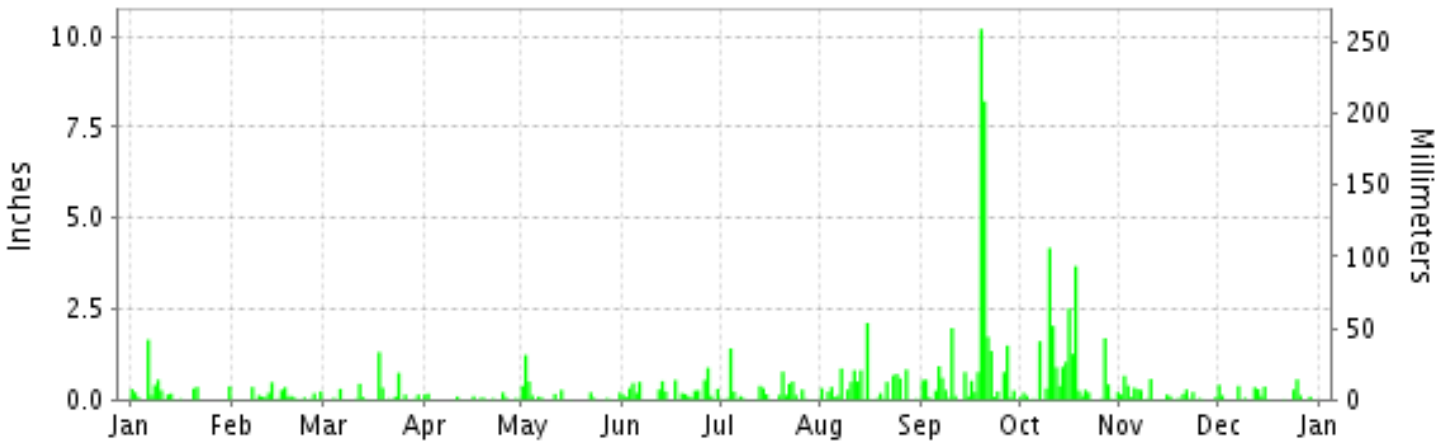
ISSN 0198-425X

## AGANA, PACIFIC (PGUM)

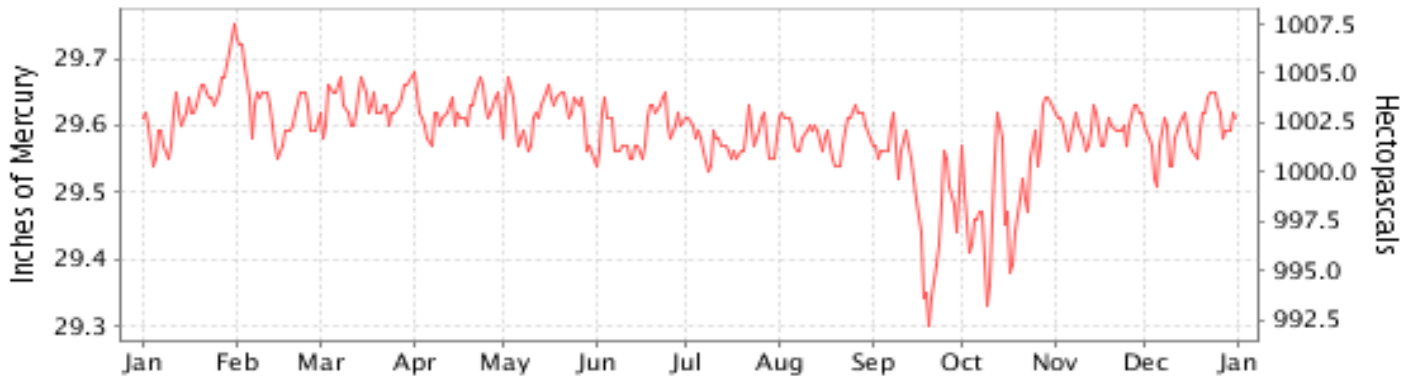
### Daily Max/Min Temperature



### Daily Precipitation



### Daily Station Pressure



I CERTIFY THAT THIS IS AN OFFICIAL PUBLICATION OF THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, AND IS COMPILED FROM RECORDS ON FILE AT THE NATIONAL CLIMATIC DATA CENTER.

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ENVIRONMENTAL SATELLITE, DATA  
AND INFORMATION SERVICE

NATIONAL  
CLIMATIC DATA CENTER  
ASHEVILLE, NORTH CAROLINA

*Thomas R. Karl*  
DIRECTOR  
NATIONAL CLIMATIC DATA CENTER

# METEOROLOGICAL DATA FOR 2013

## AGANA (PGUM)

LATITUDE: 13° 28'N      LONGITUDE: 144° 48'E      ELEVATION (FT): GRND: 254 BARO: 250      TIME ZONE: 150 E MER (UTC 10)      WBAN: 41415

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	85.2	85.3	88.9	90.2	90.6	90.0	90.8	88.4	87.3	86.1	88.0	86.6	88.1	
	HIGHEST DAILY MAXIMUM	88	87	91	93	93	92	93	92	91	90	89	89	93	
	DATE OF OCCURRENCE	16	17+	28+	28	27+	23+	03+	04	25+	31	30+	14	JUL 03+	
	MEAN DAILY MINIMUM	75.1	74.8	77.8	78.8	79.8	80.7	79.6	76.8	76.1	76.6	77.7	77.0	77.6	
	LOWEST DAILY MINIMUM	71	71	74	76	76	78	76	74	74	73	73	74	71	
	DATE OF OCCURRENCE	25+	17	02	05+	13	30+	04	13	06+	11	16	24+	FEB 17	
	AVERAGE DRY BULB	80.1	80.0	83.4	84.5	85.2	85.4	85.2	82.6	81.7	81.4	82.9	81.8	82.9	
	MEAN WET BULB	74.1		76.0	76.3	77.6	78.3	78.4	77.9	77.8	78.0	77.3	76.1		
	MEAN DEW POINT	71.5		72.9	72.8	74.6	75.6	75.7	76.0	76.4	76.8	75.1	73.8		
	NUMBER OF DAYS WITH:														
	MAXIMUM >= 90°	0	0	11	21	27	24	28	7	4	1	0	0	0	123
MAXIMUM <= 32°	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
MINIMUM <= 32°	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
MINIMUM <= 0°	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
H/C	HEATING DEGREE DAYS	0	0	0	0	0	0	0	0	0	0	0	0	0	
	COOLING DEGREE DAYS	478	426	577	592	632	617	637	554	510	519	544	530	6616	
RH	MEAN (PERCENT)	78	80	73	70	72	74	74	81	86	87	80	79	78	
	HOUR 04 LST	85	85	82	79	81	80	83	89	92	92	86	85	85	
	HOUR 10 LST	72	71	65	61	62	69	67	73	80	82	72	71	70	
	HOUR 16 LST	71	75	66	64	65	70	68	75	81	84	75	75	72	
	HOUR 22 LST	83	83	79	75	79	78	79	86	90	89	83	84	82	
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG(VISBY <= 1/4 MI)	0	0	0	0	0	0	0	0	2	1	0	0	3	
	THUNDERSTORMS	0	0	0	0	1	2	7	13	15	5	1	1	45	
PR	MEAN STATION PRESS. (IN.)	29.63	29.63	29.63	29.62	29.62	29.59	29.58	29.59	29.50	29.50	29.60	29.59	29.59	
	MEAN SEA-LEVEL PRESS. (IN.)	29.87	29.87	29.87	29.86	29.86	29.83	29.82	29.83	29.74	29.74	29.84	29.84	29.83	
WINDS	RESULTANT SPEED (MPH)	11.9	13.5	11.2	9.1	6.9	9.3	5.7	4.0	1.3	2.5	10.8	10.7	7.6	
	RES. DIR. (TENS OF DEGS.)	06	07	07	08	09	09	09	10	24	15	07	07	08	
	MEAN SPEED (MPH)	12.7	14.1	11.8	9.7	7.6	9.6	6.7	5.4	6.2	8.7	11.2	11.5	9.6	
	PREVAIL.DIR.(TENS OF DEGS.)	08	07	08	08	09	08	08	09	20	18	07	06	08	
	MAXIMUM 2-MINUTE WIND														
	SPEED (MPH)	32	32	26	29	21	26	23	22	39	37	29	31	39	
	DIR. (TENS OF DEGS.)	04	07	08	08	06	08	09	06	26	08	07	08	26	
	DATE OF OCCURRENCE	21	13	28	01	27	11	04	21	20	16	20	25	SEP 20	
	MAXIMUM 3-SECOND WIND:														
	SPEED (MPH)	39	40	37	39	29	35	30	30	52	46	36	39	52	
DIR. (TENS OF DEGS.)	04	07	07	09	07	09	10	11	26	08	07	09	26		
DATE OF OCCURRENCE	20	13	06	01	22	05	04	07	20	16	20	25	SEP 20		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	5.12	2.95	3.95	1.14	3.51	6.32	5.39	10.84	32.25	22.66	4.13	3.33	101.59	
	GREATEST 24-HOUR (IN.)	1.66	0.50	1.37	0.28	1.63	1.42	1.47	2.14	11.87	4.29	0.67	0.70	11.87	
	DATE OF OCCURRENCE	06	13-14	18-19	01-02	01-02	26-27	03-04	15-16	19-20	09-10	02	25-26	SEP 19-20	
	NUMBER OF DAYS WITH:														
PRECIPITATION 0.01	19	22	20	17	18	25	24	26	25	26	24	19	265		
PRECIPITATION 0.10	12	11	8	5	9	18	13	17	21	20	12	11	157		
PRECIPITATION 1.00	1	0	1	0	1	0	1	1	6	8	0	0	19		
SNOWFALL	SNOW,ICE PELLETS,HAIL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	TOTAL (IN.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	GREATEST 24-HOUR (IN.)														
	DATE OF OCCURRENCE	0	0	0	0	0	0	0	0	0	0	0	0	0	
	MAXIMUM SNOW DEPTH (IN.)														
DATE OF OCCURRENCE															
NUMBER OF DAYS WITH:															
SNOWFALL >= 1.0	0	0	0	0	0	0	0	0	0	0	0	0	0		

# NORMALS, MEANS, AND EXTREMES AGANA (PGUM)

LATITUDE:  
13° 28'N

LONGITUDE:  
144° 48'E

ELEVATION (FT):  
GRND: 254 BARO: 250

TIME ZONE:  
150 E MER (UTC 10)

WBAN: 41415

	ELEMENT	POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	84.9	84.9	85.8	87.3	87.9	87.9	87.1	86.5	86.7	86.8	86.5	85.6	86.5	
	MEAN DAILY MAXIMUM	57	84.3	84.1	85.3	86.6	87.4	87.5	86.8	86.3	85.7	86.3	86.0	85.0	85.9	
	HIGHEST DAILY MAXIMUM	55	90	89	92	93	93	94	94	92	95	91	90	91	95	
	YEAR OF OCCURRENCE		2012	2011	2006	2013	2013	2005	1983	2013	1957	2004	2012	2012	2012	SEP 1957
	MEAN OF EXTREME MAXS.	57	86.5	86.6	87.7	88.7	89.7	89.9	89.8	89.4	89.3	89.1	88.3	87.1	88.5	
	NORMAL DAILY MINIMUM	30	75.5	75.0	75.6	76.5	77.2	77.4	76.6	76.3	76.2	76.5	77.2	76.8	76.4	
	MEAN DAILY MINIMUM	57	72.5	72.2	72.7	73.9	74.5	74.7	74.0	73.6	73.0	73.7	74.4	74.1	73.6	
	LOWEST DAILY MINIMUM	55	56	59	54	59	62	63	64	63	61	64	62	61	54	
	YEAR OF OCCURRENCE		1978	1959	1965	1965	1960	1983	1986	1983	1958	1987	1957	1980	1980	MAR 1965
	MEAN OF EXTREME MINS.	57	65.9	66.4	66.9	68.8	69.7	70.4	70.4	70.3	69.6	69.4	69.8	68.4	68.8	
	NORMAL DRY BULB	30	80.2	79.9	80.7	81.9	82.6	82.6	81.9	81.4	81.4	81.7	81.8	81.2	81.4	
	MEAN DRY BULB	57	78.4	78.2	79.0	80.3	80.9	81.1	80.4	80.0	79.3	80.1	80.2	79.6	79.8	
	MEAN WET BULB	30	73.8	73.6	73.7	75.0	76.0	76.6	76.8	76.8	76.8	76.8	76.8	76.4	75.3	
	MEAN DEW POINT	30	72.9	72.0	72.5	73.9	75.1	75.8	76.1	76.2	76.1	76.1	75.8	74.5	74.8	
	NORMAL NO. DAYS WITH: MAXIMUM >= 90	30	0.0	0.0	0.0	0.9	2.5	3.8	1.2	0.6	0.5	0.6	0.3	0.0	10.4	
	MAXIMUM <= 32	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
MINIMUM <= 32	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
MINIMUM <= 0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
H/C	NORMAL HEATING DEG. DAYS	30	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NORMAL COOLING DEG. DAYS	30	471	419	487	507	544	529	522	508	493	516	505	502	6003	
RH	NORMAL (PERCENT)	30														
	HOUR 04 LST	30														
	HOUR 10 LST	30	77	76	74	73	73	75	79	81	81	80	79	78	77	
	HOUR 16 LST	30	75	73	72	71	72	74	78	80	80	80	79	78	76	
	HOUR 22 LST	30	86	86	85	86	88	89	91	92	93	92	89	87	89	
S	PERCENT POSSIBLE SUNSHINE	38	48	53	58	57	55	50	40	37	38	38	40	39	46	
W/O	MEAN NO. DAYS WITH: HEAVY FOG(VISBY <= 1/4 MI)	35	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.0	0.1	1.1	
	THUNDERSTORMS	35	0.4	0.1	0.0	0.3	1.3	2.1	6.5	8.4	7.3	5.5	2.4	0.6	34.9	
CLOUDINESS	MEAN: SUNRISE-SUNSET (OKTAS)	21	5.7	6.0	5.3	5.7	5.8	6.4	6.8	7.0	6.6	6.7	5.8	5.8	6.1	
	MIDNIGHT-MIDNIGHT (OKTAS)	4	4.8	4.8	3.7	5.0	4.9	5.8	6.8	6.4	5.9	6.1	4.9	4.8	5.3	
	MEAN NO. DAYS WITH: CLEAR	21	3.1	2.1	2.9	1.2	0.9	0.7	0.3	0.1	0.2	0.4	2.3	2.4	16.6	
	PARTLY CLOUDY	21	12.6	10.1	15.3	14.5	15.8	10.6	8.3	4.7	6.3	9.8	12.9	12.5	133.4	
	CLOUDY	21	15.1	16.0	12.8	14.2	14.4	18.7	21.3	25.0	22.3	19.7	13.5	14.9	207.9	
PR	MEAN STATION PRESSURE(IN)	30	29.56	29.56	29.58	29.56	29.55	29.54	29.51	29.50	29.50	29.47	29.52	29.53	29.53	
	MEAN SEA-LEVEL PRES. (IN)	30	29.87	29.88	29.89	29.87	29.85	29.85	29.82	29.80	29.80	29.81	29.82	29.84	29.84	
WINDS	MEAN SPEED (MPH)	30	11.7	11.8	11.7	11.0	9.6	9.2	7.4	7.1	6.7	7.7	10.7	11.6	9.7	
	PREVAIL.DIR(TENS OF DEGS)	8	06	07	06	08	08	08	08	09	08	08	08	08	08	
	MAXIMUM 2-MINUTE: SPEED (MPH)	14	35	32	35	32	37	47	74	52	39	37	38	106	106	
	DIR. (TENS OF DEGS)		05	07	07	08	07	28	22	24	26	08	06	27	27	
	YEAR OF OCCURRENCE		2010	2013	2002	2005	2002	2004	2002	2004	2013	2013	2002	2002	DEC 2002	
	MAXIMUM 3-SECOND SPEED (MPH)	14	46	40	40	41	44	58	90	66	52	47	59	117	117	
	DIR. (TENS OF DEGS)		05	07	04	09	06	26	22	24	26	08	06	35	35	
YEAR OF OCCURRENCE		2010	2013	2007	2003	2002	2004	2002	2004	2013	2009	2002	2002	DEC 2002		
PRECIPITATION	NORMAL (IN)	30	4.96	4.53	2.77	3.58	4.30	7.09	12.14	17.15	14.17	11.80	9.17	5.98	97.64	
	MAXIMUM MONTHLY (IN)	56	20.39	14.79	16.94	19.55	40.13	38.03	29.80	38.49	32.25	26.05	20.33	25.35	40.13	
	YEAR OF OCCURRENCE		1976	1980	1971	1963	1976	2004	2002	1997	2013	1979	2003	2002	MAY 1976	
	MINIMUM MONTHLY (IN)	56	1.17	0.67	0.59	0.50	0.64	0.80	4.74	3.87	5.95	6.63	2.08	2.17	0.50	
	YEAR OF OCCURRENCE		1993	1960	1965	1965	1987	1983	1957	1965	1992	1976	1973	1992	APR 1965	
	MAXIMUM IN 24 HOURS (IN)	56	11.09	9.24	3.55	6.37	27.00	18.80	10.44	15.36	11.87	12.07	7.26	20.59	27.00	
	YEAR OF OCCURRENCE		1990	1980	1972	1974	1976	2004	2002	1992	2013	1986	1957	1997	MAY 1976	
	NORMAL NO. DAYS WITH: PRECIPITATION >= 0.01	30	20.3	18.0	18.9	18.8	20.5	24.0	26.2	26.4	25.0	25.7	24.9	23.6	272.3	
	PRECIPITATION >= 1.00	30	0.8	0.9	0.2	0.6	0.7	1.5	3.3	5.1	4.3	3.1	2.5	0.9	23.9	
SNOWFALL	NORMAL (IN)	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	MAXIMUM MONTHLY (IN)	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	YEAR OF OCCURRENCE															
	MAXIMUM IN 24 HOURS (IN)	56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	YEAR OF OCCURRENCE															
	MAXIMUM SNOW DEPTH (IN)	54	0	0	0	0	0	0	0	0	0	0	0	0	0	
YEAR OF OCCURRENCE																
NORMAL NO. DAYS WITH: SNOWFALL >= 1.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

**PRECIPITATION (inches) 2013 AGANA (PGUM)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1984	3.19	4.19	4.02	1.56	3.10	6.69	6.58	24.05	17.41	9.40	12.93	5.89	99.01
1985	8.16	3.69	5.53	5.62	11.95	14.61	13.23	15.97	18.06	8.33	4.96	8.40	118.51
1986	2.01	8.71	5.60	8.36	7.77	9.08	17.41	24.87	8.02	19.71	6.05	12.43	130.02
1987	2.63	5.94	2.36	1.35	0.64	1.61	12.30	8.50	14.41	12.18	7.91	6.64	76.47
1988	8.71	1.30	1.50	2.95	2.33	7.93	14.37	9.21	10.67	14.56	5.54	4.33	83.40
1989	3.31	9.95	1.01	10.93	4.30	9.27	11.64	13.27	14.38	12.74	10.52	4.07	105.39
1990	17.01	3.72	2.64	2.52	4.95	6.28	14.49	17.25	22.00	8.46	16.41	7.35	123.08
1991	4.85	4.58	1.79	6.33	4.40	7.28	13.33	18.62	11.27	14.49	13.72	3.29	103.95
1992	9.81	1.75	2.28	2.57	6.23	3.40	10.08	38.13	5.95	15.01	12.91	2.17	110.29
1993	1.17	4.62	1.51	1.13	1.85	3.03	6.97	14.74	12.04	9.68	8.03	5.63	70.40
1994	5.22	2.83	4.70	3.29	7.42	4.19	14.35	9.23	21.39	12.12	4.40	7.56	96.70
1995	4.08	1.90	1.44	3.09	6.67	6.20	7.03	14.25	18.65	17.74	8.13	5.85	95.03
1996	11.86	7.21	3.40	5.14	3.28	5.34	16.40	12.48	19.38	9.37	16.05	7.30	117.21
1997	7.60	2.39	1.66	10.17	1.39	8.96	10.57	38.49	6.29	10.14	10.60	23.48	131.74
1998	1.99	1.22	0.97	1.51	1.05	4.52	5.38	4.44	16.44	9.64	6.78	3.94	57.88
1999	4.70	12.59	1.91	3.68	3.53	10.41	12.81	8.39	11.94	7.98	5.42	3.51	86.87
2000	2.79	4.92	4.03	1.65	7.44	4.74	6.16	18.62	12.63	11.40	5.16	8.85	88.39
2001	2.90	3.21	2.13	1.15	2.27	13.12	15.53	24.83	7.40	11.48	12.76	6.17	102.95
2002	8.46	5.55	3.05	1.34	6.32	7.13	29.80	20.53	17.19	7.02	6.94	25.35	138.68
2003	2.45	3.13	5.40	5.87	2.91	6.17	10.16	9.51	21.73	12.65	20.33	11.94	112.25
2004	4.17	6.94	3.42	3.38	5.51	38.03	10.11	37.32	10.85	9.87	6.46	3.27	139.33
2005	1.55	5.17	2.47	2.50	2.40	8.58	9.72	17.98	17.29	12.10	5.98	3.36	89.10
2006	6.80	4.45	0.98	0.96	2.15	8.84	20.18	12.07	8.94	15.39	5.11	3.97	89.84
2007	4.24	1.36	2.37	1.92	8.77	1.93	7.40	16.01	13.58	14.44	13.29	2.68	87.99
2008	3.07	8.02	1.99	3.08	2.79	5.39	10.42	7.84	15.47	7.21	4.79	3.30	73.37
2009	4.53	1.90	3.06	3.03	3.57	4.58	10.72	26.14	15.54	11.13	5.08	7.85	97.13
2010	4.69	1.06	4.40	2.16	0.74	5.33	12.09	12.18	12.15	13.54	4.38	4.09	76.81
2011	9.11	6.21	4.12	5.56	5.77	5.96	20.54	15.00	16.37	15.45	6.14	5.24	115.47
2012	6.50	2.85	4.45	3.05	7.63	6.63	6.74	26.42	15.98	10.56	5.45	2.81	99.07
2013	5.12	2.95	3.95	1.14	3.51	6.32	5.39	10.84	32.25	22.66	4.13	3.33	101.59
POR= 57 YRS	5.52	4.55	3.64	3.95	5.66	6.94	11.53	15.85	14.90	12.72	9.04	6.52	100.82

WBAN : 41415

**AVERAGE TEMPERATURE (°F) 2013 AGANA (PGUM)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1984	76.8	76.2	77.6	79.1	79.9	79.4	78.8	78.1	78.4	79.6	78.9	78.6	78.5
1985	77.7	78.3	78.8	78.9	78.6	78.8	78.9	78.5	78.9	78.9	79.3	78.5	78.7
1986	78.1	76.9	78.5	79.5	79.3	79.9	79.0	79.7	79.4	79.5	80.1	78.2	79.0
1987	76.9	76.9	77.7	79.2	79.8	81.2	79.5	80.0	80.5	79.7	79.5	79.9	79.2
1988	78.8	78.5	79.8	79.9	81.0	79.9	79.4	79.9	79.7	79.4	80.1	79.8	79.7
1989	79.6	78.2	77.7	79.7	80.7	79.6	79.5	79.4	79.1	79.2	79.4	79.5	79.3
1990	78.7	78.2	78.2	79.5	80.6	80.9	80.2	79.6	79.2	79.9	79.5	78.6	79.4
1991	77.8	77.8	78.7	80.3	80.7	81.0	80.6	80.5	80.0	79.6	79.6	78.3	79.6
1992	78.0	77.5	78.7	78.8	79.8	81.4	80.5	79.4	80.6	80.0	79.6	78.8	79.4
1993	78.3	77.5	79.0	81.3	82.0	81.7	81.4	79.5	79.8	79.6	80.4	79.9	80.0
1994	78.6	78.3	79.8	81.0	81.4	81.7	80.0	80.1	79.6	78.6	79.4	78.0	79.7
1995	76.9	76.5	79.6	81.2	82.1	82.2	81.7	81.7	81.6	81.1	82.0	81.6	80.7
1996	80.1	79.6	80.7	81.4	82.9	83.2	82.0	81.7	81.1	82.1	81.1	81.2	81.4
1997	80.2	81.0	80.4	81.3	82.4	82.1	83.0	81.0	82.0	82.1	81.1	81.5	81.5
1998	80.8	80.2	79.7	81.7	83.0	82.8	83.0	82.4	81.2	82.6	82.7	82.3	81.9
1999	81.4	80.7	82.4	82.5	82.6	81.6	80.9	82.1	80.8	82.2	82.0	82.0	81.8
2000	79.9	80.8	81.8	82.8	82.6	82.3	81.5	81.1	80.4	81.8	83.0	82.0	81.7
2001	81.2	80.9	81.4	83.3	83.8	82.8	81.0	81.6	81.3	82.4	81.0	81.3	81.8
2002	80.2	80.2	81.8	81.9	83.1	83.6	81.6	81.7	81.5	82.4	82.5	80.6	81.8
2003	80.0	79.5	80.6	82.3	82.4	81.8	82.4	82.5	81.4	82.6	82.2	81.2	81.6
2004	80.3	80.8	81.5	82.9	83.3	81.8	81.6	80.5	82.2	82.6	82.3	80.9	81.7
2005	79.9	79.6	81.4	82.2	82.5	82.9	82.5	81.1	81.0	81.3	82.6	82.6	81.6
2006	80.9	81.5	81.5	82.5	82.9	83.6	80.9	81.2	82.2	80.6	81.8	81.9	81.8
2007	80.8	80.4	80.6	82.8	82.6	83.9	83.0	81.2	81.7	82.0	82.1	81.9	81.9
2008	81.8	81.5	81.3	83.1	82.8	82.7	81.5	81.2	81.2	82.5	83.5	82.3	82.1
2009	81.3	81.9	80.9	82.7	83.3	83.3	82.7	82.0	82.1	81.9	82.9	81.3	82.2
2010	80.5	80.6	81.3	82.3	84.2	84.4	82.6	81.5	81.0	82.4	83.5	82.6	82.2
2011	81.7	80.7	82.1	82.7	84.0	84.4	82.7	81.4	81.1	81.0	81.8	81.5	82.1
2012	80.0	80.8	81.3	82.8	83.1	83.3	82.5	81.2	82.4	81.9	83.4	83.0	82.1
2013	80.1	80.0	83.4	84.5	85.2	85.4	85.2	82.6	81.7	81.4	82.9	81.8	82.9
POR= 57 YRS	78.4	78.2	79.0	80.3	80.9	81.1	80.4	80.0	79.3	80.1	80.2	79.6	79.8

**HEATING DEGREE DAYS (base 65°F) 2013 AGANA (PGUM)**

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1984-85	0	0	0	0	0	0	0	0	0	0	0	0	0
1985-86	0	0	0	0	0	0	0	0	0	0	0	0	0
1986-87	0	0	0	0	0	0	0	0	0	0	0	0	0
1987-88	0	0	0	0	0	0	0	0	0	0	0	0	0
1988-89	0	0	0	0	0	0	0	0	0	0	0	0	0
1989-90	0	0	0	0	0	0	0	0	0	0	0	0	0
1990-91	0	0	0	0	0	0	0	0	0	0	0	0	0
1991-92	0	0	0	0	0	0	0	0	0	0	0	0	0
1992-93	0	0	0	0	0	0	0	0	0	0	0	0	0
1993-94	0	0	0	0	0	0	0	0	0	0	0	0	0
1994-95	0	0	0	0	0	0	0	0	0	0	0	0	0
1995-96	0	0	0	0	0	0	0	0	0	0	0	0	0
1996-97	0	0	0	0	0	0	0	0	0	0	0	0	0
1997-98	0	0	0	0	0	0	0	0	0	0	0	0	0
1998-99	0	0	0	0	0	0	0	0	0	0	0	0	0
1999-00	0	0	0	0	0	0	0	0	0	0	0	0	0
2000-01	0	0	0	0	0	0	0	0	0	0	0	0	0
2001-02	0	0	0	0	0	0	0	0	0	0	0	0	0
2002-03	0	0	0	0	0	0	0	0	0	0	0	0	0
2003-04	0	0	0	0	0	0	0	0	0	0	0	0	0
2004-05	0	0	0	0	0	0	0	0	0	0	0	0	0
2005-06	0	0	0	0	0	0	0	0	0	0	0	0	0
2006-07	0	0	0	0	0	0	0	0	0	0	0	0	0
2007-08	0	0	0	0	0	0	0	0	0	0	0	0	0
2008-09	0	0	0	0	0	0	0	0	0	0	0	0	0
2009-10	0	0	0	0	0	0	0	0	0	0	0	0	0
2010-11	0	0	0	0	0	0	0	0	0	0	0	0	0
2011-12	0	0	0	0	0	0	0	0	0	0	0	0	0
2012-13	0	0	0	0	0	0	0	0	0	0	0	0	0
2013-	0	0	0	0	0	0	0	0	0	0	0	0	0

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**COOLING DEGREE DAYS (base 65°F) 2013 AGANA (PGUM)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1984	374	333	396	428	467	437	433	413	408	461	424	429	5003
1985	401	378	436	424	430	423	437	425	427	436	434	427	5078
1986	416	338	425	439	448	454	440	464	437	457	457	415	5190
1987	373	338	399	432	462	496	455	470	474	464	441	468	5272
1988	434	396	467	454	504	455	454	471	449	457	461	464	5466
1989	460	376	401	448	495	446	456	456	428	450	440	456	5312
1990	434	379	417	440	493	485	480	460	431	469	440	431	5359
1991	403	364	431	465	497	489	494	489	456	458	443	422	5411
1992	411	370	430	420	466	497	488	453	475	475	444	437	5366
1993	418	356	442	498	534	507	514	458	454	459	470	469	5579
1994	432	379	465	489	517	507	471	475	443	429	436	408	5451
1995	374	331	459	493	535	523	523	525	504	508	519	522	5816
1996	475	428	493	498	561	551	534	521	492	536	490	509	6088
1997	478	453	482	495	548	521	567	502	517	537	491	517	6108
1998	497	435	464	505	566	539	564	544	492	552	537	543	6238
1999	515	447	546	533	550	502	500	539	481	540	515	533	6201
2000	469	465	527	540	554	525	520	506	470	531	546	531	6184
2001	509	452	516	555	588	540	504	521	496	547	489	513	6230
2002	479	431	526	515	567	566	520	523	501	546	533	491	6198
2003	472	412	490	525	547	512	546	545	499	555	522	512	6137
2004	483	465	520	543	574	511	525	489	522	551	523	497	6203
2005	468	416	517	521	550	543	552	503	483	511	536	553	6153
2006	498	469	517	529	562	562	502	510	524	489	510	530	6202
2007	498	440	490	537	552	574	564	511	508	532	520	531	6257
2008	527	484	513	549	558	538	519	509	493	551	559	543	6343
2009	513	479	498	537	574	557	554	532	519	531	545	517	6356
2010	488	441	514	526	601	588	552	520	485	543	560	554	6372
2011	522	445	537	539	595	590	552	515	489	504	510	519	6317
2012	469	466	513	543	568	554	547	508	531	532	556	564	6351
2013	478	426	577	592	632	617	637	554	510	519	544	530	6616

## SNOWFALL (inches) 2013 AGANA (PGUM)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1984-85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985-86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1986-87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987-88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988-89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989-90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990-91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991-92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992-93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993-94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994-95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995-96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996-97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997-98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998-99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999-00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000-01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001-02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002-03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003-04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008-09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011-12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012-13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
POR= 57 YRS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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### REFERENCE NOTES :

PAGE 1:  
THE TEMPERATURE GRAPH SHOWS NORMAL MAXIMUM AND NORMAL MINIMUM DAILY TEMPERATURES (SOLID CURVES) AND THE ACTUAL DAILY HIGH AND LOW TEMPERATURES (VERTICAL BARS).

PAGE 2 AND 3:

H/C INDICATES HEATING AND COOLING DEGREE DAYS.

RH INDICATES RELATIVE HUMIDITY

W/O INDICATES WEATHER AND OBSTRUCTIONS

S INDICATES SUNSHINE.

PR INDICATES PRESSURE.

CLOUDINESS ON PAGE 3 IS THE SUM OF THE CEILOMETER AND SATELLITE DATA NOT TO EXCEED EIGHT EIGHTHS(OKTAS).

GENERAL:

T INDICATES TRACE PRECIPITATION, AN AMOUNT GREATER THAN ZERO BUT LESS THAN THE LOWEST REPORTABLE VALUE.

+ INDICATES THE VALUE ALSO OCCURS ON EARLIER DATES.

BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA.

ASOS INDICATES AUTOMATED SURFACE OBSERVING SYSTEM.

PM INDICATES THE LAST DAY OF THE PREVIOUS MONTH.

POR (PERIOD OF RECORD) BEGINS WITH THE JANUARY DATA MONTH AND IS THE NUMBER OF YEARS USED TO COMPUTE THE MEAN. INDIVIDUAL MONTHS WITHIN THE POR MAY BE MISSING.

WHEN THE POR FOR A NORMAL IS LESS THAN 30 YEARS, THE NORMAL IS PROVISIONAL AND IS BASED ON THE NUMBER OF YEARS INDICATED.

0.\* OR \* INDICATES THE VALUE OR MEAN-DAYS-WITH IS BETWEEN 0.00 AND 0.05.

CLOUDINESS FOR ASOS STATIONS DIFFERS FROM THE NON-ASOS OBSERVATION TAKEN BY A HUMAN OBSERVER. ASOS STATION CLOUDINESS IS BASED ON TIME-AVERAGED CEILOMETER DATA FOR CLOUDS AT OR BELOW 12,000 FEET

CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS.

GENERAL CONTINUED:

WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. "00" INDICATES CALM. "36" INDICATES TRUE NORTH.

RESULTANT WIND IS THE VECTOR AVERAGE OF THE SPEED AND DIRECTION.

AVERAGE TEMPERATURE IS THE SUM OF THE MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURE DIVIDED BY 2.

SNOWFALL DATA COMPRISE ALL FORMS OF FROZEN

PRECIPITATION, INCLUDING HAIL.

A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65 F.

DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR.

DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY.

WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY.

ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTHS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER.

STATION HISTORY STOPPED WITH THE 2009 ANNUAL. IF YOU NEED STATION HISTORY INFORMATION GO TO "Historical Observing Metadata Repository", URL IS:

<http://www.ncdc.noaa.gov/homr/>

SNOWFALL STOPPED MONTH & YEAR INDICATED ABOVE. NO FURTHER YEARS INCLUDED UNLESS RESTARTED.

### NOTE:

The "Period of Record:(POR)" for all "averages" is based on "Summary of the Day First Order Station" and "Cooperative Summary of the Day" archives.

# 2013

## Agana (Guam)

### PACIFIC (PGUM)

Guam is the largest and southernmost of the Mariana Islands. The Philippine Sea lies to the west and the Pacific Ocean to the east. The island is 28 miles long, 4 to 8 miles wide, and is oriented north northeast and south southwest. Located 1,500 miles east of Manila and 3,000 miles west of Honolulu, Guam serves as an important stopping place for aircraft and ships. It also has long been an important American military base. Outside of the activities of the Federal and Territorial governments, the most important single industry is agriculture.

Guam is shaped like a bow tie, and in correspondence with this shape, there are three topographic regions. The northern portion of the island is a limestone plateau that is bounded by steep cliffs that either fall directly to the sea or to narrow beaches. The surface of the plateau is 300 to 600 feet above sea level. The southern portion of the island is mountainous with several peaks that rise above 1,000 feet. The highest of these is Mount Lamlam which reaches 1,334 feet. The third major region, the narrow waist between the northern and southern regions, is quite low, generally less than 200 feet above sea level.

The National Weather Service station on Guam is located on the western side of the northern plateau. The ocean is 1 1/2 miles to the west, 9 miles to the north and east, and 5 miles to the southeast. The weather instruments at the station are well exposed in the center of an open field that is 40 acres in area. The trade winds reach the station after rising sharply up the 500-foot cliffs on the eastern side of the island and flowing 9 miles on an easy downslope grade across the surface of the northern plateau.

The climate of Guam is almost uniformly warm and humid throughout the year. Afternoon temperatures are typically in the middle or high 80s and

nighttime temperatures typically fall to the low 70s or high 60s. Relative humidity commonly ranges from around 65 to 75 percent in the afternoon to 85 to 100 percent at night. Though temperature and humidity vary only slightly throughout the year, rainfall and wind conditions vary markedly, and it is these latter variations that really define the seasons.

There are two primary seasons and two secondary seasons on Guam. The primary seasons are the four-month dry season, which extends from January through April, and the four-month rainy season which extends from mid-July to mid-November. The secondary seasons are May to mid-July and mid-November through December. These are transitional seasons that may be either rainy or dry depending upon the nature of the particular year. On the average, about 15 percent of the annual rainfall occurs during the dry season and 55 percent during the rainy season.

At all times of the year the dominant winds on Guam are the trade winds which blow from the east or northeast. The trades are strongest and most constant during the dry season, when wind speeds of 15 to 25 mph are very common. During the rainy season there is often a breakdown of the trades, and on some days the weather may be dominated by westerly-moving storm systems that bring heavy showers or steady, and sometimes torrential, rain. Occasionally there are typhoons, and these bring not only tremendous rains, but also violent winds that may cause a surge of water onto low-lying coastal areas. Typhoons have passed sufficiently close to Guam to produce high winds and heavy rains in every month, but their most frequent occurrence is during the latter half of the year.

# Station History

AGANA, GQ

NAME	Begin Date	End Date	Latitude	Longitude	Elevation Feet	Relocation	Platform
GUAM WSMO	1982-01-01	1996-07-23	13° 33'	144° 49'	361		COOP, WXSVC
GUAM WSMO	1996-07-23	1998-04-01	13° 33'	144° 50'	361		COOP, WXSVC
GUAM WFO	1998-04-01	2000-01-11	13° 28'	144° 48'	254		COOP, WXSVC
GUAM WB	1957-10-01	1961-01-01	13° 33'	144° 49'	358		COOP, WXSVC
GUAM WSMO	1961-01-01	1982-01-01	13° 33'	144° 49'	358		COOP, WXSVC
GUAM INTERNATIONAL AP	2000-01-11	Present	13° 28'	144° 48'	254		ASOS, COOP, WXSVC
TAGUAC WB	1956-07-01	1957-08-31	13° 33'	144° 49'	358		COOP, WXSVC

# Element History

Element	Begin Date	End Date	Frequency	Time Of Observation	Equipment *	Equipment * Modifications	Equipment Exposure
PRECIP	1985-10-04	1995-07-01	DAILY	2400	TB	RCRD	
EVAP	1995-07-01	1996-07-23	DAILY	1800	MONEL (F)		
EVAP	1985-10-04	1995-07-01	DAILY	1800	MONEL (F)		
PRECIP	1995-07-01	1996-07-23	HOURLY	2400	UNIV	RCRD	
EVAP	1996-07-23	1998-04-01	DAILY	1800	MONEL (F)		
PRECIP	1996-07-23	1998-04-01	DAILY	2400	TB	RCRD	
PRECIP	1957-10-01	1985-10-04	DAILY	2400			
PRECIP	1998-04-01	Present	HOURLY	2400	TB	RCRD	
TEMP	1985-10-04	1995-07-01	DAILY	2400			
TEMP	1995-07-01	1996-07-23	DAILY	2400			
PRECIP	1995-07-01	1996-07-23	DAILY	2400	TB	RCRD	
PRECIP	1996-07-23	1998-04-01	HOURLY	2400	TB	RCRD	
TEMP	1998-04-01	Present	DAILY	2400	MXMN		
TEMP	1956-07-01	1957-08-31	DAILY	2400			
PRECIP	1985-10-04	1995-07-01	HOURLY	2400			
TEMP	1996-07-23	1998-04-01	DAILY	2400			
EVAP	1957-10-01	1985-10-04	DAILY	1800			
EVAP	1956-07-01	1957-08-31	DAILY	1800			
PRECIP	1956-07-01	1957-08-31	DAILY	2400			
PRECIP	1998-04-01	Present	DAILY	2400	SRG		
TEMP	1957-10-01	1985-10-04	DAILY	2400			

\* For explanation of codes and abbreviations see Station Metadata link below.

Other Station Information can be found at:

ASOS Implementation by NWS: <http://www.nws.noaa.gov/ops2/Surface/asosimplementation.htm>

Station Metadata website: <http://www.ncdc.noaa.gov/homr>

INQUIRES/COMMENTS CALL: (828) 271-4800, option 2

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TDD : (828) 271-4010

Email : [ncdc.orders@noaa.gov](mailto:ncdc.orders@noaa.gov)

NOAA/National Climatic Data Center

Attn: User Engagement & Services Branch

151 Patton Avenue

Asheville, NC 28801-5001

Visit our Web Site for other weather data: [www.ncdc.noaa.gov](http://www.ncdc.noaa.gov)