



JULY 2003

LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

HOUSTON, TX

INTERCONTINENTAL AIRPORT (IAH)
 Lat: 29°59' N Long: 95°21' W Elev (Ground): 118 Feet
 Time Zone: CENTRAL WBAN: 12960 ISSN #:0198-5094

JULY 2003
HOUSTON, TX

DATE	TEMPERATURE °F						DEG DAYS BASE 65°		WEATHER	SNOW/ICE ON GND(IN)		PRECIPITATION (INCHES)		PRESSURE (INCHES OF HG)		WIND SPEED = MPH DIR = TENS OF DEGREES						DATE	
	MAXIMUM	MINIMUM	AVERAGE	DEP FROM NORMAL	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING		0600 LST	1200 LST	2400 LST	2400 LST	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	MAXIMUM				
																			5-SEC		2-MIN		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
01	88	76	82	-1	74	76	0	17	TS TSRA RA	0		0.0	0.37	29.82	29.94	0.4	12	.4	8	15	8	14	01
02	92	74	83	0	74	77	0	18	RA	0		0.0	T	29.77	29.88	1.1	12	1.1	13	12	9	11	02
03	89	75	82	-1	76	77	0	17	TS TSRA RA BR	0		0.0	0.82	29.76	29.88	0.6	15	.7	15	12	14	12	03
04	88	74	81	-2	75	76	0	16	TSRA RA BR	0		0.0	0.11	29.82	29.94	0.7	08	.8	15	17	14	11	04
05	88	74	81	-2	75	77	0	16	TSRA RA BR	0		0.0	0.25	29.87	29.98	2.6	11	3.2	9	12	8	13	05
06	92	78	85	2	75	77	0	20	RA	0		0.0	T	29.87	29.99	4.2	14	4.4	15	15	14	15	06
07	90	73	82	-1	75	76	0	17	TS TSRA RA	0		0.0	0.50	29.92	30.03	1.3	12	1.6	24	17	18	17	07
08	89	74	82	-1	74	76	0	17	TS TSRA RA	0		0.0	0.01	29.98	30.09	2.3	15	2.5	15	22	13	21	08
09	91	75	83	0	75	76	0	18	TS TSRA RA BR	0		0.0	0.35	29.95	30.06	0.9	17	.9	15	21	12	22	09
10	90	75	83	0	76	78	0	18	TS RA	0		0.0	0.02	29.90	30.01	0.8	17	1.2	14	16	12	16	10
11	91	76	84	1	75	77	0	19	RA	0		0.0	T	29.92	30.03	0.2	35	1.2	9	16	8	14	11
12	93	73	83	0	72	76	0	18		0		0.0	0.00	29.93	30.04	1.3	12	1.9	14	07	8	16	12
13	93	74	84	1	73	76	0	19		0		0.0	0.00	29.89	30.00	1.4	13	1.8	10	11	8	12	13
14	93	75	84	1	71	75	0	19	TSRA BR	0		0.0	0.18	29.85	29.96	3.7	05	4.5	17	05	15	05	14
15	84	75	80*	-4	74	76	0	15	TSRA RA BR	0		0.0	0.46	29.82	29.93	8.7	09	9.7	23	12	16	10	15
16	87	76	82	-2	77	78	0	17	TS TSRA RA BR	0		0.0	1.72	29.99	30.10	3.8	13	4.4	21	11	16	11	16
17	94	73*	84	0	73	76	0	19	MIFG BR	0		0.0	0.00	30.04	30.15	0.3	15	.4	9	13	8	12	17
18	92	78	85	1	75	78	0	20	TS	0		0.0	0.00	29.97	30.08	0.7	18	.7	9	36	9	17	18
19	92	76	84	0	74	77	0	19		0		0.0	0.00	29.95	30.06	0.3	25	.8	9	27	8	15	19
20	94	76	85	1	73	77	0	20		0		0.0	0.00	29.93	30.04	2.0	22	2.2	9	21	8	23	20
21	96	78	87	3	74	78	0	22		0		0.0	0.00	29.86	29.97	1.6	20	2.0	9	19	8	21	21
22	95	78	87*	3	75	78	0	22		0		0.0	0.00	29.84	29.95	3.8	21	4.3	12	18	9	18	22
23	88	75	82	-2	76	78	0	17	TSRA RA BR	0		0.0	0.15	29.87	29.99	1.0	23	2.2	16	24	14	34	23
24	87	75	81	-3	75	76	0	16	TS TSRA RA BR	0		0.0	0.41	29.90	30.01	0.0	00	.0					24
25	91	74	83	-1	75	77	0	18		0		0.0	0.00	29.94	30.05	4.3	17	5.2	18	18	14	19	25
26	91	76	84	0	74	76	0	19	TS RA	0		0.0	T	30.01	30.12	4.0	14	5.0	29*	14	25*	14	26
27	94	74	84	0	73	76	0	19	MIFG	0		0.0	0.00	30.02	30.13	3.5	15	4.2	16	15	13	17	27
28	95	74	85	1	72	76	0	20		0		0.0	0.00	29.94	30.05	2.6	19	3.7	20	14	17	15	28
29	96*	76	86	2	74	77	0	21		0		0.0	0.00	29.87	29.98	3.0	20	4.2	16	24	12	16	29
30	94	77	86	2	74	77	0	21		0		0.0	0.00	29.89	30.00	3.9	21	5.1	22	17	17	17	30
31	95	76	86	2	72	76	0	21		0		0.0	0.00	29.91	30.03	3.7	21	4.8	16	22	13	17	31

91.4	75.3	83.4	■ ■	74.2	76.7	0.0	18.5	< MONTHLY AVERAGES	TOTALS->	0.0	5.35	29.90	30.02	0.8	20	2.8	<- MONTHLY AVERAGES					
------	------	------	-----	------	------	-----	------	--------------------	----------	-----	------	-------	-------	-----	----	-----	---------------------	--	--	--	--	--

-2.2	1.8	-.2	■ ■	DEPARTURE FROM NORMAL						2.17	SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3										
------	-----	-----	-----	-----------------------	--	--	--	--	--	------	--	--	--	--	--	--	--	--	--	--	--

DEGREE DAYS								GREATEST 24-HR PRECIPITATION: 1.78 DATE: 15-16				SEA LEVEL PRESSURE DATE TIME			
MONTHLY TOTAL DEPARTURE				SEASON TO DATE TOTAL DEPARTURE				GREATEST 24-HR SNOWFALL: 0.0 DATE:				MAXIMUM MINIMUM : 30.22 17 0753			
HEATING: 0 0				COOLING: 575 2 1847 215				GREATEST SNOW DEPTH: 0 DATE:				MINIMUM : 29.83 02 1753			
NUMBER OF DAYS WITH				MAXIMUM TEMP ≥ 90: 22				MINIMUM TEMP ≤ 32: 0				PRECIPITATION ≥ 0.01 INCH : 13			
				MAXIMUM TEMP ≤ 32 : 0				MINIMUM TEMP ≤ 0 : 0				PRECIPITATION ≥ 0.10 INCH : 11			
				THUNDERSTORMS : 15				HEAVY FOG : 0				SNOWFALL ≥ 1.0 INCH : 0			

HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

HOUSTON, TX

JULY 2003

IAH

WBAN # 12960

DATE	FOR HOUR (LST) ENDING AT												DATE	FOR HOUR (LST) ENDING AT												DATE	Sum if Different (See Note)	2400 LST
	1	2	3	4	5	6	7	8	9	10	11	12		13	14	15	16	17	18	19	20	21	22	23	24			Water Equiv.
01													01	0.37	T										01		0.37	
02												0.52	02					T							02		T	
03													03	0.21	0.05	0.04									03		0.82	
04						T		T					04	0.09	0.02	T	T			T	T				04		0.11	
05						0.01		T	0.21	0.01	0.01		05						0.01						05		0.25	
06													06			T	T								06		T	
07													07	0.41	T	0.03	0.01	T	T	0.01	0.03	0.01	T		07		0.50	
08													08	0.01	T										08		0.01	
09													09	0.24	T	0.03	0.04			T	0.04	T			09		0.35	
10											0.01		10			T	T							10	0.01	0.02		
11													11			T		T							11		T	
12													12												12		0.00	
13													13												13		0.00	
14													14					0.18							14		0.18	
15			T	0.04		T	0.01	0.12	0.11	0.01	0.10	0.06	15	T			0.01	T						15		0.46		
16				T					T	1.42	0.29	T	16	0.01											16		1.72	
17													17												17		0.00	
18													18												18		0.00	
19													19												19		0.00	
20													20												20		0.00	
21													21												21		0.00	
22													22												22		0.00	
23											T	0.12	0.03	23											23		0.15	
24													24	0.38	0.03		T								24		0.41	
25													25												25		0.00	
26													26		T										26		T	
27													27												27		0.00	
28													28												28		0.00	
29													29												29		0.00	
30													30												30		0.00	
31													31												31		0.00	

MAXIMUM SHORT DURATION PRECIPITATION (See Note)

Time Period (Minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation (Inches)	.35	.51	.67	.86	1.03	1.39	1.45	1.71	1.71	1.71	1.71	1.71
Ending Date	16	16	16	16	16	16	16	16	16	16	16	16
Ending Time (Hour/Min)	0943	0945	0944	0943	0949	0946	1002	1010	1010	1010	1010	1010

Date and time are not entered for TRACE amounts.

Note : The sum of the hourly totals is given when it differs from the daily total. NWS does not edit ASOS hourly values but may edit daily and monthly totals. Hourly, daily, and monthly totals are printed as reported by the ASOS site.

REFERENCE NOTES & SUPPLEMENTAL SUMMARIES

* = Extreme for the month (last occurrence if more than one)

T = Trace precipitation amount

+ = also occurs on earlier date

FG+ = Heavy fog, visibility .25 miles or less

BLANK entries denote missing or unreported data

Resultant wind is the vector sum of the wind speeds and directions divided by the number of observations.

Wind direction is recorded in tens of degrees (2 digits) clockwise from true north. '00' = calm, 'VR' = variable.

Precipitation is for the 24-hour period ending at the time indicated in the column heading.

Water Equivalent of snow on the ground is reported only when the depth is 2 or more inches.

NORMALS ARE FOR THE YEARS 1971–2000

WEATHER NOTATIONS

QUALIFIER	WEATHER PHENOMENA		
	PRECIPITATION	OBSCURATION	OTHER
BC Patches	DZ Drizzle	BR Mist	DS Duststorm
BL Blowing	GR Hail	DU Widespread Dust	FC Funnel Cloud
DR Low Drifting	GS Small Hail and/or Snow Pellets	FG Fog	+FC Tornado Waterspout
FZ Freezing	IC Ice Crystals	FU Smoke	PO Well-Developed Dust/Sand Whirls
MI Shallow	PL Ice Pellets	HZ Haze	SQ Squalls
PR Partial	RA Rain	PY Spray	SS Sandstorm
SH Shower(s)	SG Snow Grains	SA Sand	GL Glaze
TS Thunderstorm	SN Snow	VA Volcanic Ash	
VC In the Vicinity	UP Unknown Precipitation		

Intensity (as indicated on pages 4 to 6):
'+' = Heavy ' ' = Moderate '-' = Light

HOUSTON, TX JULY 2003

Ceilometer (30-second) data are used to derive cloudiness at or below 12,000 feet. This cloudiness is the mean cloud cover detected during sunrise to sunset (SR–SS), or midnight to midnight (MN–MN).

Satellite data are used to derive cloudiness above 12,000 feet. Effective Cloud Amount is based on the cloud cover and the transparency of the clouds within the satellite field of view (approx. 31x31 miles).

Sky Condition is based on the sum (not to exceed 8) of the sunrise to sunset cloud cover below and above 12,000 feet. Both ceilometer and satellite data must be present to compute Sky Condition. Clear = 0–2 oktas, Partly Cloudy = 3–6 oktas, Cloudy = 7–8 oktas.

A Heating (Cooling) Degree Day is the difference between the average daily temperature and 65 degrees F. The HDD season begins July 1, the CDD season begins January 1.

Dew Point is the temperature to which the air must be cooled to achieve 100% relative humidity. Wet Bulb is the temperature the air would have if cooled to saturation at constant pressure by evaporation of water into it.

Snow Depth, Snowfall, and Sunshine data may come from nearby sites that the National Weather Service deems Climatologically representative of this site.

ADDITIONAL NOTES:

DATE	SUNSHINE		CLOUDINESS (OKTAS)				VISIBILITY (MILES)		RESERVED
	TOTAL MINUTES	PERCENT POSSIBLE	SR–SS		MN–MN		MINIMUM	MAXIMUM	
			CEILOMETER	SATELLITE	CEILOMETER	SATELLITE			
01							5.00	10.00	
02							9.00	10.00	
03							2.00	10.00	
04							3.00	10.00	
05							5.00	10.00	
06							9.00	10.00	
07							10.00	10.00	
08							10.00	10.00	
09							3.00	10.00	
10							7.00	10.00	
11							10.00	10.00	
12							10.00	10.00	
13							10.00	10.00	
14							10.00	10.00	
15							5.00	10.00	
16							.75	10.00	
17							.50	10.00	
18							10.00	10.00	
19							8.00	10.00	
20							10.00	10.00	
21							10.00	10.00	
22							10.00	10.00	
23							5.00	10.00	
24							4.00	10.00	
25							8.00	10.00	
26							8.00	10.00	
27							10.00	10.00	
28							10.00	10.00	
29							10.00	10.00	
30							10.00	10.00	
31							10.00	10.00	
MONTHLY AVGS							7.73	10.00	
SUNSHINE (MINUTES)									
Total: Possible: Percent Possible:									
NUMBER OF DAYS WITH:									
SKY CONDITION									
CLR PTLY CLDY CLOUDY MISSING 31									
MINIMUM VISIBILITY (MILES)									
<=0.25 <=3.0 >=7.0 0 4 21									

OBSERVATIONS AT 3-HOURLY INTERVALS

HOUSTON, TX

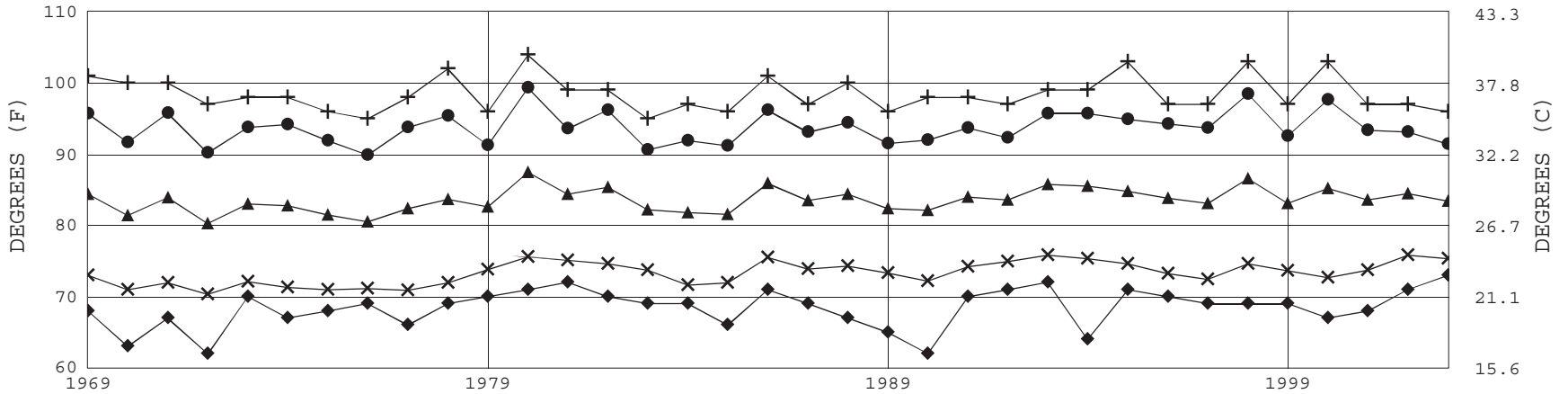
JULY 2003

IAH

WBAN # 12960

HOUR (LST)	SKY COVER		CEILING 100'S OF FT	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)		HOUR (LST)	SKY COVER		CEILING 100'S OF FT	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)	
	SKY COVER	CEILING 100'S OF FT		OBSERVATION TIME (LST)	EFF CLD AMT Ok/as			DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL		SKY COVER	CEILING 100'S OF FT		OBSERVATION TIME (LST)	EFF CLD AMT Ok/as			DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL
SUNRISE: 0536								JUL 25				SUNSET: 1920				SUNRISE: 0540								JUL 31				SUNSET: 1916			
03	BKN	250			10.00			76	75	75	97	0	00	29.90	30.01	03	CLR	NC			10.00			79	67	71	67	0	00	29.91	30.02
06	SCT	NC			8.00			75	74	74	96	0	00	29.93	30.04	06	SCT	NC			10.00			77	76	76	96	0	00	29.93	30.04
09	BKN	250			10.00			83	78	79	85	0	00	29.99	30.11	09	BKN	250			10.00			86	76	79	72	7	23	29.95	30.07
12	OVC	250			10.00			88	75	79	66	7	VR	29.97	30.08	12	BKN	250			10.00			92	71	77	51	7	26	29.94	30.06
15	BKN	250			10.00			91	74	79	57	13	16	29.93	30.04	15	BKN	250			10.00			93	69	76	46	3	29	29.89	30.00
18	BKN	250			10.00			87	73	77	63	7	VR	29.90	30.01	18	BKN	250			10.00			92	72	78	52	9	12	29.86	29.98
21	BKN	250			10.00			82	77	78	85	8	15	29.91	30.02	21	FEW	NC			10.00			84	73	76	70	7	19	29.88	29.99
24	SCT	NC			10.00			79	76	77	90	6	16	29.97	30.08	24	CLR	NC			10.00			81	74	76	79	6	19	29.92	30.03
SUNRISE: 0537								JUL 26				SUNSET: 1919				3-HOURLY OBSERVATION NOTES															
03	SCT	NC			10.00			78	76	77	93	0	00	29.98	30.09	Sky Cover is the amount of the sky obscured. CLR or SKC = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, VV = Vertical Visibility = 8/8.															
06	SCT	NC			8.00			77	76	76	96	0	00	30.00	30.12	Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet.															
09	SCT	NC			10.00			85	75	78	72	5	VR	30.04	30.16	NC= No ceiling detected.															
12	SCT	NC			10.00			91	73	78	56	5	VR	30.02	30.13	& = Original observation contained additional weather elements.															
15	OVC	250			10.00			82	70	74	67	9	14	30.02	30.14	See page 3 for additional notes.															
18	BKN	250			10.00			85	71	75	63	7	17	29.98	30.09																
21	FEW	NC			10.00			80	73	75	79	3	18	30.01	30.12																
24	SCT	NC			10.00			78	76	77	93	3	14	30.03	30.15																
SUNRISE: 0537								JUL 27				SUNSET: 1919																			
03	CLR	NC			10.00			77	74	75	90	0	00	30.01	30.13																
06	SCT	NC			10.00		MIFG	75	73	74	94	0	00	30.04	30.16																
09	SCT	NC			10.00			84	74	77	72	3	VR	30.08	30.19																
12	SCT	NC			10.00			88	70	76	55	0	00	30.06	30.17																
15	BKN	250			10.00			93	68	76	44	7	14	29.99	30.10																
18	BKN	250			10.00			89	70	76	53	12	16	29.95	30.06																
21	SCT	NC			10.00			81	74	76	79	5	17	29.99	30.10																
24	SCT	NC			10.00			79	74	76	85	0	00	29.98	30.09																
SUNRISE: 0538								JUL 28				SUNSET: 1918																			
03	SCT	NC			10.00			76	74	75	94	0	00	29.96	30.08																
06	BKN	250			10.00			75	73	74	94	0	00	29.96	30.07																
09	BKN	250			10.00			83	75	77	77	3	24	29.99	30.11																
12	BKN	250			10.00			90	69	76	50	3	16	29.98	30.09																
15	BKN	250			10.00			92	67	75	44	6	16	29.90	30.01																
18	BKN	250			10.00			87	73	77	63	8	18	29.87	29.98																
21	BKN	250			10.00			82	72	75	72	3	19	29.89	30.01																
24	BKN	250			10.00			79	74	76	85	3	20	29.88	30.00																
SUNRISE: 0538								JUL 29				SUNSET: 1917																			
03	SCT	NC			10.00			77	75	76	94	0	00	29.87	29.99																
06	SCT	NC			10.00			76	75	75	97	0	00	29.89	30.01																
09	BKN	250			10.00			85	76	79	75	7	27	29.92	30.03																
12	FEW	NC			10.00			91	71	77	52	6	VR	29.89	30.01																
15	SCT	NC			10.00			95	65	75	37	0	00	29.82	29.94																
18	BKN	250			10.00			89	74	78	61	6	18	29.79	29.91																
21	CLR	NC			10.00			84	75	78	74	6	18	29.84	29.95																
24	CLR	NC			10.00			81	76	77	85	5	20	29.86	29.98																
SUNRISE: 0539								JUL 30				SUNSET: 1917																			
03	CLR	NC			10.00			78	75	76	90	0	00	29.86	29.98																
06	SCT	NC			10.00			79	75	76	88	0	00	29.89	30.01																
09	BKN	032			10.00			86	76	79	72	8	27	29.93	30.04																
12	BKN	250			10.00			92	70	77	49	7	25	29.91	30.02																
15	BKN	080			10.00			86	71	76	61	10	17	29.86	29.98																
18	SCT	NC			10.00			89	73	78	59	8	17	29.84	29.96																
21	SCT	NC			10.00			84	73	76	70	3	19	29.89	30.01																
24	CLR	NC			10.00			81	76	77	85	6	19	29.92	30.03																

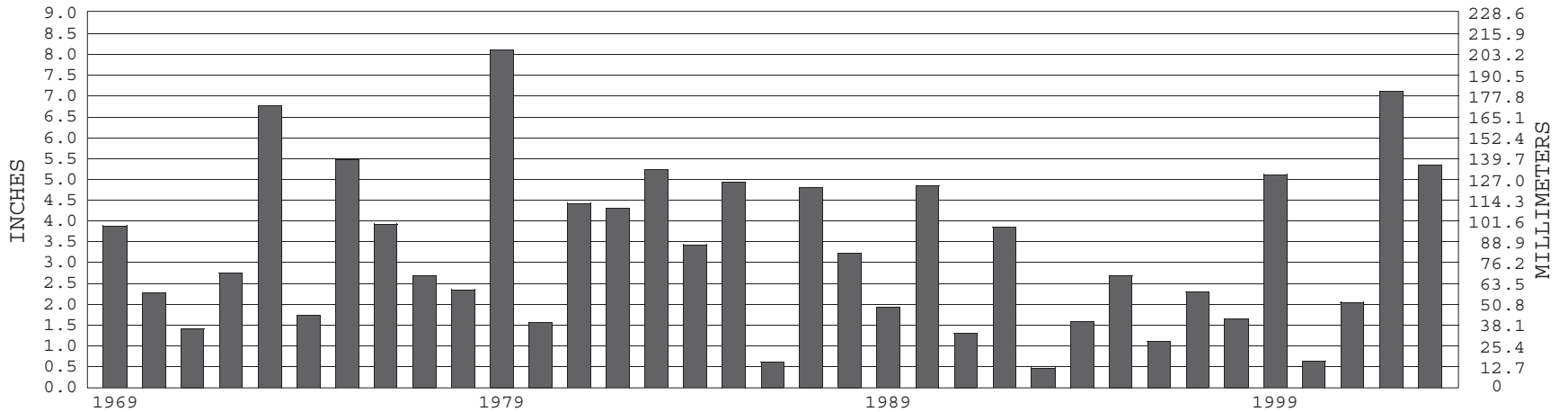
HOUSTON, TX JULY TEMPERATURES



+ Extreme Max. ● Mean Max. ▲ Mean × Mean Min. ◆ Extreme Min.

Long-Term (1969-2003) Mean: 83.6 1961-1990 Normal: 83.6

HOUSTON, TX JULY PRECIPITATION



Long-Term (1969-2003) Mean Monthly Total: 3.31

1961-1990 Normal: 3.18



JULY 2003
HOUSTON, TX

LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

I certify that this is an official publication of the National Oceanic and Atmospheric Administration (NOAA). It is compiled using information from weather observing sites operated by NOAA – National Weather Service / Department Of Transportation – Federal Aviation Administration and received at the National Climatic Data Center (NCDC), Asheville, North Carolina 28801.

DIRECTOR

NCDC now offers an annual online subscription for the **Edited Local Climatological Data Publication**. When you purchase this subscription service, you will have **immediate online access** to all previous publications back to July 1996 and all publications thereafter until the expiration of the subscription. Your subscription is valid for one year after purchase. **The total cost is \$29 for online delivery (including back issues) compared to \$34 for offline delivery.** To order this and other subscriptions online with your credit card, go to: www.ncdc.noaa.gov and choose subscriptions.

We welcome your questions or comments, please contact us at
Toll Free Number (866) 742–3322 (voice)
Fax Number :(304) 726–4409
TDD : 828–271–4010
or Email : ncdc.info@noaa.gov
Local Climatological Data is available at www.ncdc.noaa.gov

For address correction, please return a photocopy of this page to Subscription Services indicating changes

NCDC Subscription Services Center
310 State Route 956 Building 300
Rocket Center, WV 26726

OFFICIAL BUSINESS. PENALTY FOR PRIVATE USE \$300

FIRST CLASS
POSTAGE AND FEES PAID
NOAA
PERMIT G-19