

MAY 14, 1993

NATIONAL CLIMATIC DATA CENTER
RESEARCH CUSTOMER SERVICE GROUP

TECHNICAL REPORT 93-01

THE BIG ONE!
A REVIEW OF THE MARCH 12-14, 1993
"STORM OF THE CENTURY"

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On March 12-15, a storm now called "The Storm of the Century" struck the eastern seaboard. Following are the highlights of the information gathered about the storm thus far:

1) The preliminary death toll for the U.S. is approximately 270, and 48 people were reported as missing at sea (Gulf of Mexico and Atlantic, including Canadian waters). This is over 3 times the combined death toll of 79 attributed to hurricanes Hugo and Andrew. The death toll includes those caused by direct and indirect (e.g., shoveling snow) results of the storm. Due to the widespread nature of the storm, assessing its toll has been quite difficult for damage survey teams--hurricanes are easier to assess due to their more limited areal coverage. The following breakdown by state (not including lost at sea) is still preliminary (its summation does not reflect all deaths from the storm):

Florida	44	New York	23
South Carolina	1	Alabama	16
Georgia	15	Tennessee	14
North Carolina	19	Kentucky	5
Virginia	13	Maryland	3
West Virginia	4	Maine	2
Pennsylvania	49		

2) Thousands of people were isolated by record snowfalls, especially in the Georgia, North Carolina, and Virginia mountains. Over 200 hikers were rescued from the North Carolina and Tennessee mountains. Curfews were enforced in many counties and cities as 'states of emergency' were declared. The National Guard was deployed in many areas to protect lives and property. Generally, all interstate highways from Atlanta northward were closed.

3) For the first time, every major airport on the east coast was closed at one time or another by the storm. The Asheville, NC airport was closed for 3 days. Snowfall rates of 2-3 inches per hour were common during the height of the storm. Generally, New York's Catskill Mountains along with most of the central and southern Appalachians received at least 2 feet of snow. In areas to the east, wind-driven sleet occurred in some areas, with central New Jersey reporting 2.5 inches of sleet on top of 12 inches of snow--somewhat of an "ice-cream sandwich" affect.

4) Hundreds of roof collapses occurred due to the weight of the heavy wet snow. Over 3 million customers were without electrical power at one time due to fallen trees and high winds.

5) At least 18 homes fell into the sea on Long Island due to the pounding surf. About 200 homes along North Carolina's Outer Banks were damaged and may be uninhabitable. Over 160 people were rescued at sea by the Coast Guard in the Gulf of Mexico and Atlantic. At least 1 freighter sank in the Gulf of Mexico.

6) Florida was struck by an estimated 15 tornadoes, and 44 deaths in Florida were attributed either to the tornadoes or other severe weather. A 12-foot storm surge occurred in Taylor County, FL resulting in at least 7 deaths. Also, up to 6 inches of snow fell in the Florida panhandle.

7) 3 storm-related deaths were reported in Quebec and 1 in Ontario. About 110 miles south of Cape Sable Island, Nova Scotia, a 177-meter ship sank in heavy seas, with all 33 of its crew lost at sea. 65-foot waves were reported in the area. Also, a wind gust of 131 MPH occurred at Grand Etang, Nova Scotia. Some parts of northern New Brunswick experienced temperature drops of 45 degrees Fahrenheit in 18 hours. 3 deaths occurred in Cuba (Havana was blacked out), and a tornado left 5000 people homeless in Reynosa, Mexico (near Texas border).

8) Highest recorded wind gusts included:

144 MPH on Mount Washington, NH
109 MPH in the Dry Tortugas (west of Key West, FL)
101 MPH on Flattop Mountain, NC (by NCDC employee Grant Goodge--due to ice accumulation on anemometer, he estimated 105-107 MPH)
98 MPH in South Timbalier, LA
92 MPH on South Marsh Island, LA
90 MPH in Myrtle Beach, SC
89 MPH in Fire Island, NY
83 MPH in Vero Beach, FL
81 MPH in Boston, MA
71 MPH at La Guardia Arpt, NY

9) Snowfall totals included:

56 inches on Mount LeConte, TN
50 inches on Mount Mitchell, NC (14-foot drifts)
44 inches in Snowshoe, WV
43 inches in Syracuse, NY
36 inches in Latrobe, PA (10-foot drifts)
35 inches in Lincoln, NH
30 inches in Beckley, WV
29 inches in Page County, VA
27 inches in Albany, NY
25 inches in Pittsburgh, PA
24 inches in Mountain City, GA
20 inches in Chattanooga, TN
19 inches in Portland, ME
19 inches in Asheville, NC
17 inches near Birmingham, AL (6-foot drifts)
16 inches in Roanoke, VA
13 inches in Washington, DC
9 inches in Boston, MA
4 inches in Atlanta, GA

10) Record low temperatures included (some records for March):

- 12 degrees in Burlington, VT and Caribou, ME
- 11 degrees in Syracuse, NY
- 10 degrees on Mount LeConte, TN
- 5 degrees in Elkins, WV
- 4 degrees in Waynesville, NC and Rochester, NY
- 1 degree in Pittsburgh, PA
- 2 degrees in Asheville, NC and Birmingham, AL
- 6 degrees in Knoxville, TN
- 8 degrees in Greensboro, NC
- 1 degree in Beckley, WV
- 11 degrees in Chattanooga, TN and Philadelphia, PA
- 15 degrees in New York-JFK and Washington, DC
- 17 degrees in Montgomery, AL
- 18 degrees in Columbia, SC and Atlanta, GA
- 19 degrees in Augusta, GA
- 21 degrees in Mobile, AL
- 25 degrees in Savannah, GA and Pensacola, FL
- 31 degrees in Daytona Beach, FL

11) Record low sea-level pressures included:

- 28.38 inches in White Plains, NY
- 28.43 inches in Philadelphia, PA
- 28.43 inches at JFK Arpt, NY
- 28.45 inches in Dover, DE
- 28.51 inches in Boston, MA
- 28.53 inches in Augusta, ME
- 28.54 inches in Norfolk, VA
- 28.54 inches in Washington, DC
- 28.61 inches in Raleigh-Durham, NC
- 28.63 inches in Columbia, SC
- 28.73 inches in Augusta, GA
- 28.74 inches in Greenville-Spartanburg, SC
- 28.89 inches in Asheville, NC

12) The National Weather Service's Office of Hydrology estimated the volume of water that fell as snow as 44 million acre-feet. This is comparable to 40 days' flow on the Mississippi River at New Orleans. For example, the NWS office at the Asheville, NC airport reported a snow/water ratio of 4.2 to 1 from core samples of new snow. Numerous core samples taken in a nearby area by an NCDC employee showed similar results with a ratio of 5.3 to 1. This equated to 4-5 inches of liquid equivalent precipitation (or even higher in some areas) from the storm. Areas north of Asheville which reported up to 4 feet of snow probably received 'drier' snow with similar liquid equivalent amounts. Due to the weight of the heavy snow, damage to trees and some buildings was extensive. Polk County, NC reported 99% of its electrical customers without power at one point during the storm. Some sleet also occurred during the storm, contributing to its 'heavy' nature. Many of the power outages occurred

before the high winds arrived (due to snow-induced tree damage).

13) Overall damage figures are not yet complete, but the insured property damage estimates now exceed \$1.6 billion. Therefore, this was the 4th costliest storm in U.S. history, and by far the most costly extra-tropical storm. Some estimates of total damages and costs from the storm now exceed \$6 billion.

14) Comparisons to the Blizzard of 1888 are quite interesting. A few facts from the '88 storm:

The storm began in earnest on March 12, the same date as this year's storm.

Over 400 people died, including 200 in New York City alone.

Snowfall averaged 40-50 inches over southeastern New York state and southern New England with drifts to 30-40 feet.

58 inches of snow in Saratoga Springs, NY.

48 inches of snow in Albany, NY.

45 inches of snow in New Haven, CT.

22 inches of snow in New York City.

Snow drifts over the tops of houses from New York to New England, with reports of drifts covering 3-story houses.

Highest reported drift was 52 feet in Gravesend, NY.

80 MPH wind gusts were reported, although the highest official report in New York City was 40 MPH, with 54 MPH at Block Island. The winds in the '88 storm, although severe, were not as severe as several other storms which have struck the same area.

From Chesapeake Bay through the New England area, over 200 ships were either grounded or wrecked resulting in the deaths of at least 100 seamen.

The NY Central Park Observatory reported a minimum temperature of 6 degrees, and a daytime average of 9 degrees on March 13, the coldest ever for March.

Severe flooding after the storm due to melting snow--especially in the Brooklyn area, which was more susceptible to serious flooding due to topography.

The '88 storm is sometimes compared to the 1717 snow event ("The Great Snow of 1717"), which was the result of 4 snowstorms occurring between February 27 and March 7. Snowfall totals amounted to 5 feet or more in some areas, with much higher drifts.

Although the '88 storm was more severe in the Northeast and New England than the '93 storm, it did not affect the entire eastern seaboard to the extent that the 1993 storm affected the area. The '93 storm affected 26 states and about 50% of the nation's population. In fact, on the Saffir-Simpson scale for hurricane strength, it equated to a category 3 hurricane based on storm surge and minimum pressure attained.

OBSERVATIONAL DATA

The attached data lists were taken from decoded surface

observations for the period March 12-15, 1993. The most damaging characteristics of the storm were the heavy snow, the high winds (including tornadoes), and the storm surge/high waves. The first list focuses on some of the stations which reported the water equivalent of snow on the ground. The second list shows all reports of wind speed or wind gust of at least 70 MPH. The third list shows all reports from ships at sea of wave or swell heights of at least 20 feet.

A complete file (in the same format as data list #1) of all observations (56090 observations--4.6 megabytes) during March 12 to 15 from latitude 20 N to 50 N and longitude 65 W to 95 W is available as shown below. Also, additional data (other elements such as wave heights) from these observations are available from NCDC upon request.

- 1) 4 diskettes (3.5 inch high density).
- 2) Magnetic or cartridge tape.
- 3) INTERNET via FTP:
 - a) open ftp.ncdc.noaa.gov
 - b) Login is: anonymous
 - c) Password is: your email address
 - d) You are now logged onto a UNIX workstation. Enter 'help' if you'd like a list of available commands.
 - e) To move to the correct subdirectory, enter:
cd /pub/data/blizzard
 - f) To get a copy of the data, enter:
get storm.txt destination (destination is your output location and name)...e.g.--
get storm.txt c:storm.txt - copies to hard drive c:
 - g) If you need a copy of a call letter-station name cross reference file, enter: get stnlist.txt destination
 - h) For a copy of this report, enter: get blizz.txt destination

CONCLUSION

If you have any questions about this report or the data, please contact either Neal Lott or Tom Ross:

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This report was prepared by the National Climatic Data Center's Research Customer Service Group. The decoded surface weather observations were obtained from Operating Location 'A' of the USAF Environmental Technical Applications Center in Asheville, NC. Numerous individuals and sources (too numerous to mention) provided information for this report, and we thank all those who contributed.

DATA LIST #1

CALL = CALL LETTERS
LAT = LATITUDE
LON = LONGITUDE
YR--MODAHRMN = YEAR-MONTH-DAY-HOUR-MINUTE IN LST (CONVERTED FROM GMT USING LONGITUDE OF THE STATION DUE TO LARGE NUMBER OF STATIONS IN DATASET)
DIR = WIND DIRECTION (990 = VARIABLE)
SPD & GUS = WIND SPEED & GUST IN MPH
VSBY = VISIBILITY IN STATUTE MILES--ROUNDED
WW = CURRENT WEATHER INDICATORS FROM 'AIRWAYS' TYPE OBSERVATIONS
TMP & DEW = TEMP & DEW POINT IN FAHRENHEIT
SLP = SEA LEVEL PRESSURE IN INCHES & HUNDREDTHS
SNDP = SNOW DEPTH IN INCHES
WTEQ = WATER EQUIVALENT OF SNOW ON GROUND IN INCHES & TENTHS
* INDICATES ELEMENT NOT REPORTED
VALUES WERE CONVERTED FROM METRIC TO ENGLISH UNITS

AVL = ASHEVILLE, NC
ILG = WILMINGTON, DE
BKW = BECKLEY, WV
JKL = JACKSON, KY
LGA = LA GUARDIA ARPT, NY
CON = CONCORD, NH

CALL	LAT	LON	YR--MODAHRMN	DIR	SPD	GUS	VSBY	WW	WW	WW	TMP	DEW	SLP	SNDP	WTEQ
AVL	3526	8255	199303120000	320	3	***	20	**	**	**	30	19	30.15	***	*****
AVL	3526	8255	199303120100	330	4	***	20	**	**	**	28	19	30.14	***	*****
AVL	3526	8255	199303120300	000	0	***	20	**	**	**	28	22	30.14	***	*****
AVL	3526	8255	199303120400	000	0	***	20	**	**	**	30	22	30.16	***	*****
AVL	3526	8255	199303120500	160	3	***	20	**	**	**	30	22	30.18	***	*****
AVL	3526	8255	199303120600	160	4	***	20	**	**	**	30	23	30.21	***	*****
AVL	3526	8255	199303120700	170	7	***	15	**	**	**	31	23	30.21	***	*****
AVL	3526	8255	199303120800	170	11	***	15	**	**	**	33	22	30.22	***	*****
AVL	3526	8255	199303120900	090	7	***	20	**	**	**	35	22	30.22	***	*****
AVL	3526	8255	199303121000	150	11	***	20	**	**	**	38	22	30.19	***	*****
AVL	3526	8255	199303121100	150	6	***	20	**	**	**	39	22	30.18	***	*****

AVL	3526	8255	199303121200	180	10	***	20	**	**	**	39	21	30.15	***	****
AVL	3526	8255	199303121300	120	9	***	15	**	**	**	39	20	30.14	***	****
AVL	3526	8255	199303121500	340	11	***	12	**	**	**	39	27	30.08	***	****
AVL	3526	8255	199303121600	310	9	***	1	S-	**	**	36	32	30.07	***	****
AVL	3526	8255	199303121700	090	3	***	2	S-	F	**	34	32	30.04	***	****
AVL	3526	8255	199303121732	320	3	***	4	F	**	**	***	***	*****	***	****
AVL	3526	8255	199303121800	310	4	***	1	S-	F	**	34	32	30.03	***	****
AVL	3526	8255	199303122000	330	4	***	1	S-	F	**	33	32	29.97	***	****
AVL	3526	8255	199303122036	330	6	***	1	S	F	**	***	***	*****	***	****
AVL	3526	8255	199303122100	070	9	***	1	S	F	**	32	32	29.95	2	****
AVL	3526	8255	199303122200	020	9	***	0	S	F	**	32	31	29.90	***	****
AVL	3526	8255	199303122300	330	6	***	0	S	F	**	32	31	29.83	***	****
AVL	3526	8255	199303130000	010	8	***	0	S	F	**	31	31	29.75	5	****
AVL	3526	8255	199303130030	350	7	***	1	S-	F	**	***	***	*****	***	****
AVL	3526	8255	199303130100	030	8	***	1	S-	F	**	31	30	29.65	***	****

CALL	LAT	LON	YR--MODAHRMN	DIR	SPD	GUS	VSBY	WW	WW	WW	TMP	DEW	SLP	SNDP	WTEQ
AVL	3526	8255	199303130200	010	11	***	0	S	F	**	31	30	29.57	***	****
AVL	3526	8255	199303130300	030	9	***	0	S	F	**	30	30	29.48	8	****
AVL	3526	8255	199303130304	010	6	***	0	S+	F	**	***	***	*****	***	****
AVL	3526	8255	199303130400	330	11	***	0	S+	F	**	30	30	29.35	***	****
AVL	3526	8255	199303130439	350	11	***	1	IP	S-	F	***	***	*****	***	****
AVL	3526	8255	199303130500	340	14	***	1	IP	S-	F	30	30	29.26	***	****
AVL	3526	8255	199303130600	350	15	***	0	S-	F	**	30	30	29.17	11	****
AVL	3526	8255	199303130700	350	19	***	0	S	F	**	29	28	29.13	***	****
AVL	3526	8255	199303130824	330	29	37	0	T	S	F	***	***	*****	***	****
AVL	3526	8255	199303130900	330	33	43	0	S	BS	**	27	26	28.99	14	****
AVL	3526	8255	199303131000	340	46	54	0	S	BS	**	25	25	28.93	***	****
AVL	3526	8255	199303131016	330	44	49	0	S-	BS	**	***	***	*****	***	****
AVL	3526	8255	199303131100	340	47	56	0	S-	BS	**	24	23	28.89	***	****
AVL	3526	8255	199303131200	330	48	64	0	S-	BS	**	23	22	28.89	16	3.8
AVL	3526	8255	199303131300	330	44	52	0	S-	BS	**	22	21	28.96	***	****
AVL	3526	8255	199303131400	330	40	55	0	S-	BS	**	20	19	29.00	***	****
AVL	3526	8255	199303131429	320	44	60	0	S-	BS	**	***	***	*****	***	****
AVL	3526	8255	199303131500	320	40	59	0	S-	BS	**	20	17	29.05	16	****
AVL	3526	8255	199303131600	320	41	54	0	S-	BS	**	20	16	29.13	***	****
AVL	3526	8255	199303131700	320	40	59	0	S-	BS	**	20	17	29.19	***	****
AVL	3526	8255	199303131800	310	29	46	1	S-	BS	**	20	15	29.28	17	****
AVL	3526	8255	199303131900	320	29	37	1	S-	BS	**	19	15	29.39	***	****
AVL	3526	8255	199303132000	310	23	36	0	S-	BS	**	19	15	29.49	***	****
AVL	3526	8255	199303132100	320	19	***	0	S-	BS	**	18	15	29.56	18	****
AVL	3526	8255	199303132200	320	23	29	0	S-	BS	**	18	15	29.60	***	****
AVL	3526	8255	199303132300	320	19	28	0	S-	BS	**	18	14	29.65	***	****
AVL	3526	8255	199303140000	330	16	***	2	S-	BS	**	18	14	29.71	19	****
AVL	3526	8255	199303140100	310	16	24	1	S-	BS	**	17	13	29.77	***	****
AVL	3526	8255	199303140118	280	8	***	0	S	**	**	***	***	*****	***	****
AVL	3526	8255	199303140136	320	10	***	1	S-	**	**	***	***	*****	***	****
AVL	3526	8255	199303140200	280	10	***	1	S-	**	**	17	13	29.79	***	****
AVL	3526	8255	199303140300	340	11	***	2	S-	**	**	17	14	29.83	18	****
AVL	3526	8255	199303140309	340	9	***	1	S-	**	**	***	***	*****	***	****

AVL	3526	8255	199303140332	300	18	***	2	S-	BS	**	***	***	*****	***	****
AVL	3526	8255	199303140400	310	17	***	6	S-	BS	**	17	9	29.87	***	****
AVL	3526	8255	199303140500	320	14	***	10	SW-	**	**	16	8	29.91	***	****
AVL	3526	8255	199303140600	310	14	***	30	**	**	**	15	5	29.96	18	****
AVL	3526	8255	199303140700	330	15	***	30	**	**	**	15	5	30.00	***	****
AVL	3526	8255	199303140800	310	15	***	30	**	**	**	16	5	30.04	***	****
AVL	3526	8255	199303140900	320	13	***	30	**	**	**	18	7	30.05	***	****
AVL	3526	8255	199303141000	320	15	***	30	**	**	**	20	4	30.07	***	****
AVL	3526	8255	199303141100	340	17	***	30	**	**	**	21	5	30.08	***	****
AVL	3526	8255	199303141200	360	17	***	30	**	**	**	22	5	30.09	***	3.8
AVL	3526	8255	199303141300	010	16	***	30	**	**	**	22	4	30.10	***	****
AVL	3526	8255	199303141400	010	16	25	30	**	**	**	23	5	30.13	***	****
AVL	3526	8255	199303141500	030	17	23	30	**	**	**	22	3	30.15	***	****
AVL	3526	8255	199303141600	350	13	***	25	**	**	**	22	4	30.16	***	****
AVL	3526	8255	199303141700	350	11	***	25	**	**	**	20	2	30.20	***	****
AVL	3526	8255	199303141800	360	10	***	25	**	**	**	18	2	30.24	15	****

CALL	LAT	LON	YR--MOD	AHRMN	DIR	SPD	GUS	VSBY	WW	WW	WW	TMP	DEW	SLP	SNDP	WTEQ
AVL	3526	8255	199303141900	350	6	***	25	**	**	**	15	2	30.28	***	****	
AVL	3526	8255	199303142000	000	0	***	25	**	**	**	12	3	30.32	***	****	
AVL	3526	8255	199303142100	000	0	***	25	**	**	**	12	3	30.35	***	****	
AVL	3526	8255	199303142200	070	3	***	25	**	**	**	11	2	30.36	***	****	
AVL	3526	8255	199303142300	000	0	***	20	**	**	**	9	3	30.39	***	****	
AVL	3526	8255	199303150000	000	0	***	20	**	**	**	8	2	30.41	***	****	
AVL	3526	8255	199303150100	000	0	***	20	**	**	**	5	2	30.41	***	****	
AVL	3526	8255	199303150200	000	0	***	20	**	**	**	6	2	30.42	***	****	
AVL	3526	8255	199303150300	260	3	***	20	**	**	**	10	2	30.44	***	****	
AVL	3526	8255	199303150400	130	3	***	20	**	**	**	3	0	30.49	***	****	
AVL	3526	8255	199303150500	000	0	***	20	**	**	**	3	-1	30.52	***	****	
AVL	3526	8255	199303150600	000	0	***	20	**	**	**	2	-1	30.54	15	****	
AVL	3526	8255	199303150700	180	3	***	20	**	**	**	4	1	30.58	***	****	
AVL	3526	8255	199303150800	180	6	***	20	**	**	**	10	4	30.60	***	****	
AVL	3526	8255	199303150900	150	3	***	20	**	**	**	20	6	30.62	***	****	
AVL	3526	8255	199303151000	170	6	***	20	**	**	**	28	7	30.59	***	****	
AVL	3526	8255	199303151200	170	9	***	20	**	**	**	33	11	30.59	***	3.2	
AVL	3526	8255	199303151300	150	4	***	20	**	**	**	37	8	30.55	***	****	
AVL	3526	8255	199303151400	160	7	***	20	**	**	**	37	14	30.54	***	****	
ILG	3941	7560	199303120000	300	9	***	15	**	**	**	29	17	30.18	***	****	
ILG	3941	7560	199303120100	320	9	***	15	**	**	**	29	17	30.17	***	****	
ILG	3941	7560	199303120200	330	9	***	15	**	**	**	26	16	30.17	***	****	
ILG	3941	7560	199303120400	220	6	***	15	**	**	**	26	17	30.18	***	****	
ILG	3941	7560	199303120500	220	6	***	15	**	**	**	26	17	30.20	***	****	
ILG	3941	7560	199303120600	210	4	***	15	**	**	**	25	17	30.21	***	****	
ILG	3941	7560	199303120700	240	7	***	15	**	**	**	27	19	30.24	***	****	
ILG	3941	7560	199303120800	270	7	***	15	**	**	**	32	21	30.27	***	****	
ILG	3941	7560	199303120900	280	7	***	15	**	**	**	35	21	30.28	***	****	
ILG	3941	7560	199303121000	300	10	***	15	**	**	**	38	20	30.30	***	****	
ILG	3941	7560	199303121100	260	7	***	15	**	**	**	40	20	30.29	***	****	
ILG	3941	7560	199303121200	280	4	***	15	**	**	**	42	19	30.28	***	****	
ILG	3941	7560	199303121300	330	7	***	15	**	**	**	43	18	30.25	***	****	

ILG	3941	7560	199303121400	000	0	***	15	**	**	**	44	18	30.23	***	****
ILG	3941	7560	199303121600	140	7	***	15	**	**	**	42	20	30.21	***	****
ILG	3941	7560	199303121700	180	10	***	15	**	**	**	41	25	30.23	***	****
ILG	3941	7560	199303121800	140	4	***	15	**	**	**	40	25	30.22	***	****
ILG	3941	7560	199303121900	170	10	***	15	**	**	**	39	27	30.22	***	****
ILG	3941	7560	199303122100	160	7	***	15	**	**	**	38	27	30.24	***	****
ILG	3941	7560	199303122200	140	9	***	15	**	**	**	37	28	30.23	***	****
ILG	3941	7560	199303122300	140	6	***	15	**	**	**	37	28	30.20	***	****
ILG	3941	7560	199303130000	150	6	***	15	**	**	**	37	28	30.16	***	****
ILG	3941	7560	199303130100	140	9	***	12	**	**	**	37	28	30.15	***	****
ILG	3941	7560	199303130125	150	11	***	3	S-	**	**	***	***	*****	***	****
ILG	3941	7560	199303130136	140	13	***	2	S-	**	**	***	***	*****	***	****
ILG	3941	7560	199303130200	140	9	***	1	S-	**	**	33	31	30.15	***	****
ILG	3941	7560	199303130300	110	8	***	1	S-	F	**	33	31	30.10	***	****
ILG	3941	7560	199303130312	070	8	***	1	S-	F	**	***	***	*****	***	****
ILG	3941	7560	199303130400	070	7	***	1	S-	F	**	32	31	30.04	1	****
ILG	3941	7560	199303130500	080	10	16	1	S-	F	**	32	31	29.98	***	****

CALL	LAT	LON	YR--MODAHRMN	DIR	SPD	GUS	VSBY	WW	WW	WW	TMP	DEW	SLP	SNDP	WTEQ
ILG	3941	7560	199303130505	070	11	***	1	S-	F	**	***	***	*****	***	****
ILG	3941	7560	199303130520	060	10	***	1	S-	F	**	***	***	*****	***	****
ILG	3941	7560	199303130535	070	11	***	1	S	F	**	***	***	*****	***	****
ILG	3941	7560	199303130600	060	11	***	1	S	F	**	32	31	29.92	***	****
ILG	3941	7560	199303130603	060	13	***	0	S	F	**	***	***	*****	***	****
ILG	3941	7560	199303130700	060	14	23	0	S	F	**	32	32	29.87	3	****
ILG	3941	7560	199303130800	060	16	24	0	S	F	**	32	31	29.79	***	****
ILG	3941	7560	199303130915	060	19	31	0	S	F	BS	***	***	*****	***	****
ILG	3941	7560	199303130934	050	19	34	1	S	F	BS	***	***	*****	***	****
ILG	3941	7560	199303131100	060	24	40	1	S	F	BS	32	31	29.47	***	****
ILG	3941	7560	199303131104	060	26	40	1	IP	S	F	***	***	*****	***	****
ILG	3941	7560	199303131128	050	26	43	1	IP	S-	F	***	***	*****	***	****
ILG	3941	7560	199303131200	050	30	52	1	IP	S-	F	31	30	29.21	***	****
ILG	3941	7560	199303131300	060	33	54	0	IP	S-	F	31	30	29.06	***	.6
ILG	3941	7560	199303131400	040	16	25	0	IP	S-	F	31	31	29.05	***	****
ILG	3941	7560	199303131423	050	30	43	0	IP	S	F	***	***	*****	***	****
ILG	3941	7560	199303131500	030	22	38	0	IP	S	F	32	31	28.91	***	****
ILG	3941	7560	199303131524	040	34	43	1	IP	S-	F	***	***	*****	***	****
ILG	3941	7560	199303131537	050	29	44	1	S-	F	**	***	***	*****	***	****
ILG	3941	7560	199303131600	040	29	45	6	S-	F	**	33	31	28.68	10	****
ILG	3941	7560	199303131700	050	23	40	15	**	**	**	34	31	28.65	***	****
ILG	3941	7560	199303131800	040	22	40	12	**	**	**	34	31	28.52	***	****
ILG	3941	7560	199303131900	060	29	31	12	**	**	**	35	32	28.51	8	****
ILG	3941	7560	199303131933	030	14	***	3	R-	F	**	***	***	*****	***	****
ILG	3941	7560	199303132000	030	14	***	3	R-	F	**	34	33	28.45	***	****
ILG	3941	7560	199303132019	360	13	***	4	R-	F	**	***	***	*****	***	****
ILG	3941	7560	199303132100	350	9	***	7	R-	**	**	34	33	28.44	***	****
ILG	3941	7560	199303132131	340	18	***	7	S-	**	**	***	***	*****	***	****
ILG	3941	7560	199303132200	350	21	***	7	AP	**	**	30	28	28.47	7	****
ILG	3941	7560	199303132223	330	21	***	1	S-	F	**	***	***	*****	***	****
ILG	3941	7560	199303132232	320	19	26	1	S-	F	**	***	***	*****	***	****

ILG	3941	7560	199303132300	310	23	26	1	S-	F	**	28	26	28.52	***	****
ILG	3941	7560	199303132322	330	23	36	2	S-	BS	F	***	***	*****	***	****
ILG	3941	7560	199303132335	320	30	38	3	S-	BS	F	***	***	*****	***	****
ILG	3941	7560	199303140000	320	23	34	4	S-	BS	**	25	19	28.59	***	****
ILG	3941	7560	199303140100	330	25	33	3	S-	BS	**	22	17	28.71	8	****
ILG	3941	7560	199303140131	300	19	29	1	S-	BS	**	***	***	*****	***	****
ILG	3941	7560	199303140200	300	18	28	4	S-	BS	**	22	18	28.82	***	****
ILG	3941	7560	199303140300	300	25	37	2	S-	BS	**	23	18	*****	***	****
ILG	3941	7560	199303140335	280	23	43	2	S-	BS	**	***	***	*****	***	****
ILG	3941	7560	199303140400	290	23	37	2	S-	BS	**	22	15	29.00	9	****
ILG	3941	7560	199303140500	300	25	40	6	BS	**	**	21	11	29.11	***	****
ILG	3941	7560	199303140600	300	25	37	8	**	**	**	21	6	29.21	***	****
ILG	3941	7560	199303140700	280	23	37	12	**	**	**	22	7	29.31	9	****
ILG	3941	7560	199303140800	290	23	38	12	**	**	**	20	7	29.41	***	****
ILG	3941	7560	199303140900	300	24	40	15	**	**	**	21	6	29.48	***	****
ILG	3941	7560	199303141000	290	26	43	15	**	**	**	23	8	29.55	***	****
ILG	3941	7560	199303141100	300	25	37	15	**	**	**	23	6	29.61	***	****
ILG	3941	7560	199303141200	290	26	38	15	**	**	**	24	6	29.66	***	****

CALL	LAT	LON	YR--MODAHRMN	DIR	SPD	GUS	VSBY	WW	WW	WW	TMP	DEW	SLP	SNDP	WTEQ
ILG	3941	7560	199303141300	300	26	38	15	**	**	**	24	5	29.69	***	2.4
ILG	3941	7560	199303141400	300	24	37	15	**	**	**	25	1	29.73	***	****
ILG	3941	7560	199303141500	280	25	34	15	**	**	**	25	-1	29.78	***	****
ILG	3941	7560	199303141600	290	15	31	15	**	**	**	24	0	29.82	***	****
ILG	3941	7560	199303141700	270	18	24	15	**	**	**	24	3	29.87	***	****
ILG	3941	7560	199303141800	270	14	21	15	**	**	**	23	5	29.93	***	****
ILG	3941	7560	199303141900	280	14	22	15	**	**	**	22	4	29.99	9	****
ILG	3941	7560	199303142000	290	11	***	15	**	**	**	21	3	30.05	***	****
ILG	3941	7560	199303142100	290	13	***	15	**	**	**	20	2	30.10	***	****
ILG	3941	7560	199303142200	290	10	***	15	**	**	**	19	2	30.15	***	****
ILG	3941	7560	199303142300	270	8	***	15	**	**	**	19	2	30.19	***	****
ILG	3941	7560	199303150000	290	9	***	15	**	**	**	17	2	30.22	***	****
ILG	3941	7560	199303150100	300	11	***	15	**	**	**	17	-3	30.26	***	****
ILG	3941	7560	199303150200	300	11	***	15	**	**	**	16	-2	30.29	***	****
ILG	3941	7560	199303150300	300	11	***	12	**	**	**	16	-2	30.31	***	****
ILG	3941	7560	199303150400	270	7	***	12	**	**	**	14	-1	30.36	***	****
ILG	3941	7560	199303150500	280	9	***	12	**	**	**	13	-2	30.39	***	****
ILG	3941	7560	199303150600	250	7	***	12	**	**	**	13	-2	30.43	***	****
ILG	3941	7560	199303150700	260	7	***	15	**	**	**	14	-1	30.47	9	****
ILG	3941	7560	199303150800	260	9	***	15	**	**	**	16	-1	30.51	***	****
ILG	3941	7560	199303150900	280	11	***	15	**	**	**	19	0	30.55	***	****
ILG	3941	7560	199303151000	340	11	***	15	**	**	**	22	2	30.56	***	****
ILG	3941	7560	199303151100	290	9	***	15	**	**	**	24	3	30.58	***	****
ILG	3941	7560	199303151300	310	9	16	15	**	**	**	27	3	30.58	***	1.9
ILG	3941	7560	199303151400	300	8	***	15	**	**	**	29	7	30.58	***	****
ILG	3941	7560	199303151500	290	9	***	15	**	**	**	30	8	30.58	***	****
BKW	3747	8112	199303120000	160	4	***	10	**	**	**	22	21	30.24	***	****
BKW	3747	8112	199303120100	160	4	***	7	**	**	**	22	21	30.25	***	****
BKW	3747	8112	199303120200	180	6	***	7	**	**	**	22	21	30.26	***	****
BKW	3747	8112	199303120400	140	4	***	7	**	**	**	21	19	30.23	***	****

BKW	3747	8112	199303120500	170	6	***	7	**	**	**	19	17	30.24	***	****
BKW	3747	8112	199303120600	160	4	***	7	**	**	**	21	19	30.27	***	****
BKW	3747	8112	199303120700	120	4	***	7	**	**	**	21	19	30.29	***	****
BKW	3747	8112	199303120800	000	0	***	6	F	**	**	24	23	30.28	***	****
BKW	3747	8112	199303120900	000	0	***	6	F	**	**	29	25	30.29	***	****
BKW	3747	8112	199303121000	140	6	***	10	**	**	**	31	20	30.29	***	****
BKW	3747	8112	199303121100	130	6	***	12	**	**	**	33	20	30.27	***	****
BKW	3747	8112	199303121200	160	6	***	15	**	**	**	36	21	30.24	***	****
BKW	3747	8112	199303121300	050	4	***	20	**	**	**	37	20	30.21	***	****
BKW	3747	8112	199303121400	200	45	***	****	**	**	**	***	***	*****	***	****
BKW	3747	8112	199303121534	280	9	16	12	S-	**	**	***	***	*****	***	****
BKW	3747	8112	199303121600	250	8	***	12	S-	**	**	36	21	30.19	***	****
BKW	3747	8112	199303121638	310	4	***	15	S-	**	**	***	***	*****	***	****
BKW	3747	8112	199303121700	240	6	***	20	S-	**	**	34	24	30.18	***	****
BKW	3747	8112	199303121800	250	6	***	6	S-	**	**	33	25	30.19	***	****
BKW	3747	8112	199303121840	280	3	***	3	S-	**	**	***	***	*****	***	****
BKW	3747	8112	199303121900	290	4	***	2	S-	**	**	31	27	30.18	***	****
BKW	3747	8112	199303121938	010	4	***	2	S-	**	**	***	***	*****	***	****
BKW	3747	8112	199303122028	010	7	***	1	S-	**	**	***	***	*****	***	****

CALL	LAT	LON	YR--MODAHRMN	DIR	SPD	GUS	VSBY	WW	WW	WW	TMP	DEW	SLP	SNDP	WTEQ
BKW	3747	8112	199303122100	050	6	***	2	S-	**	**	29	28	30.13	***	****
BKW	3747	8112	199303122110	020	7	***	2	S-	**	**	***	***	*****	***	****
BKW	3747	8112	199303122116	040	6	***	1	S-	**	**	***	***	*****	***	****
BKW	3747	8112	199303122200	020	6	***	1	S-	**	**	29	27	30.09	1	****
BKW	3747	8112	199303122235	030	6	***	1	S-	**	**	***	***	*****	***	****
BKW	3747	8112	199303122300	020	6	***	1	S-	**	**	28	27	30.06	***	****
BKW	3747	8112	199303122320	010	7	***	1	S	**	**	***	***	*****	***	****
BKW	3747	8112	199303122339	010	7	***	1	S-	**	**	***	***	*****	***	****
BKW	3747	8112	199303130000	010	8	***	1	S-	**	**	28	27	29.99	***	****
BKW	3747	8112	199303130100	040	8	***	1	S-	**	**	28	27	29.96	1	****
BKW	3747	8112	199303130107	050	6	***	1	S	**	**	***	***	*****	***	****
BKW	3747	8112	199303130200	040	7	***	1	S	**	**	28	27	29.88	***	****
BKW	3747	8112	199303130300	030	8	***	1	S	**	**	28	27	29.82	***	****
BKW	3747	8112	199303130400	030	9	***	1	S	**	**	27	27	29.75	4	****
BKW	3747	8112	199303130500	020	8	***	0	S	**	**	27	26	29.70	***	****
BKW	3747	8112	199303130536	030	10	***	0	S+	**	**	***	***	*****	***	****
BKW	3747	8112	199303130600	030	9	***	0	S+	**	**	26	25	29.63	***	****
BKW	3747	8112	199303130700	030	8	***	0	S+	**	**	26	25	29.55	7	****
BKW	3747	8112	199303130800	020	14	19	0	S+	**	**	25	24	29.46	***	****
BKW	3747	8112	199303131100	030	14	***	0	S+	**	**	25	24	29.17	***	****
BKW	3747	8112	199303131200	010	16	***	0	S+	BS	**	24	23	29.11	***	****
BKW	3747	8112	199303131300	010	15	***	0	S+	BS	**	23	22	29.04	14	1.7
BKW	3747	8112	199303131400	340	18	28	0	S+	BS	**	23	21	29.01	***	****
BKW	3747	8112	199303131500	010	22	29	0	S+	BS	**	21	20	29.02	***	****
BKW	3747	8112	199303131600	340	28	39	0	S+	BS	**	20	20	29.05	19	****
BKW	3747	8112	199303131700	350	21	28	0	S+	BS	**	19	17	29.10	***	****
BKW	3747	8112	199303131800	320	16	30	0	S+	BS	**	18	16	29.14	***	****
BKW	3747	8112	199303131900	340	24	36	0	S	BS	**	17	15	29.18	23	****
BKW	3747	8112	199303132000	330	31	43	0	S+	BS	**	15	14	29.25	***	****

BKW	3747	8112	199303132100	330	28	38	0	S+	BS	**	14	12	29.33	***	****
BKW	3747	8112	199303132200	320	22	34	0	S+	BS	**	14	12	29.38	26	****
BKW	3747	8112	199303132300	330	23	33	0	S	BS	**	13	11	29.45	***	****
BKW	3747	8112	199303140000	320	24	45	0	S	BS	**	14	11	29.50	***	****
BKW	3747	8112	199303140100	310	23	34	0	S	BS	**	13	11	29.57	29	****
BKW	3747	8112	199303140200	300	21	31	0	S-	BS	**	12	9	29.63	***	****
BKW	3747	8112	199303140300	320	21	29	0	S-	BS	**	12	8	29.68	***	****
BKW	3747	8112	199303140315	300	15	33	1	S-	BS	**	***	***	*****	***	****
BKW	3747	8112	199303140400	310	21	38	1	S-	BS	**	11	8	29.74	30	****
BKW	3747	8112	199303140500	310	18	29	1	S-	BS	**	11	6	29.79	***	****
BKW	3747	8112	199303140512	310	14	***	1	S-	**	**	***	***	*****	***	****
BKW	3747	8112	199303140600	320	16	25	1	S-	F	**	10	6	29.85	***	****
BKW	3747	8112	199303140700	330	13	***	1	S-	F	**	9	5	29.88	30	****
BKW	3747	8112	199303140710	320	13	***	1	S-	F	**	***	***	*****	***	****
BKW	3747	8112	199303140740	320	13	***	1	SW-	F	**	***	***	*****	***	****
BKW	3747	8112	199303140800	320	14	***	4	SW-	F	**	10	6	29.92	***	****
BKW	3747	8112	199303140818	320	19	29	1	SW-	BS	F	***	***	*****	***	****
BKW	3747	8112	199303140835	310	17	24	3	SW-	BS	F	***	***	*****	***	****
BKW	3747	8112	199303140900	310	15	23	6	SW-	BS	**	9	3	29.98	***	****
BKW	3747	8112	199303141000	310	19	29	7	SW-	**	**	10	3	30.02	***	****

CALL	LAT	LON	YR--MODAHRMN	DIR	SPD	GUS	VSBY	WW	WW	WW	TMP	DEW	SLP	SNDP	WTEQ
BKW	3747	8112	199303141041	290	17	26	1	SW-	**	**	***	***	*****	***	****
BKW	3747	8112	199303141100	300	18	25	3	SW-	**	**	11	6	30.07	***	****
BKW	3747	8112	199303141200	290	17	26	15	**	**	**	12	0	30.08	***	****
BKW	3747	8112	199303141300	300	16	***	20	**	**	**	13	-1	30.11	***	3.7
BKW	3747	8112	199303141400	330	17	25	20	**	**	**	14	-2	30.12	***	****
BKW	3747	8112	199303141500	320	15	***	20	**	**	**	16	-2	30.15	***	****
BKW	3747	8112	199303141600	310	19	***	20	**	**	**	15	-3	30.18	***	****
BKW	3747	8112	199303141700	310	11	***	20	**	**	**	15	-3	30.20	***	****
BKW	3747	8112	199303141800	300	10	***	12	**	**	**	14	-1	30.23	***	****
BKW	3747	8112	199303141900	320	9	***	12	**	**	**	12	1	30.28	29	****
BKW	3747	8112	199303142000	300	6	***	12	**	**	**	10	4	30.32	***	****
BKW	3747	8112	199303142100	310	4	***	12	**	**	**	7	3	30.36	***	****
BKW	3747	8112	199303142200	300	4	***	12	**	**	**	5	2	30.39	***	****
BKW	3747	8112	199303142300	270	6	***	12	**	**	**	7	4	30.40	***	****
BKW	3747	8112	199303150000	250	7	***	12	**	**	**	3	0	30.42	***	****
BKW	3747	8112	199303150100	260	4	***	12	**	**	**	4	-2	30.44	***	****
BKW	3747	8112	199303150200	250	6	***	12	**	**	**	8	-2	30.44	***	****
BKW	3747	8112	199303150300	250	4	***	12	**	**	**	7	-2	30.45	***	****
BKW	3747	8112	199303150400	240	4	***	12	**	**	**	8	-2	30.48	***	****
BKW	3747	8112	199303150500	260	4	***	12	**	**	**	6	-3	30.52	***	****
BKW	3747	8112	199303150600	230	4	***	12	**	**	**	4	-4	30.54	***	****
BKW	3747	8112	199303150700	220	4	***	25	**	**	**	5	-4	30.57	28	****
BKW	3747	8112	199303150800	220	7	***	30	**	**	**	8	-2	30.59	***	****
BKW	3747	8112	199303150900	230	6	***	30	**	**	**	13	1	30.62	***	****
BKW	3747	8112	199303151000	220	8	***	30	**	**	**	17	4	30.63	***	****
BKW	3747	8112	199303151100	260	6	***	30	**	**	**	22	5	30.62	***	****
BKW	3747	8112	199303151300	260	8	***	30	**	**	**	30	9	30.60	***	3.3
BKW	3747	8112	199303151400	210	8	***	30	**	**	**	31	9	30.57	***	****

BKW	3747	8112	199303151500	220	10	***	30	**	**	**	33	11	30.55	***	****
JKL	3736	8332	199303120000	360	4	***	10	**	**	**	30	25	30.20	***	****
JKL	3736	8332	199303120100	000	0	***	10	**	**	**	30	25	30.21	***	****
JKL	3736	8332	199303120300	330	6	***	10	**	**	**	27	25	30.20	***	****
JKL	3736	8332	199303120400	300	3	***	10	**	**	**	26	25	30.21	***	****
JKL	3736	8332	199303120500	330	3	***	10	**	**	**	27	26	30.21	***	****
JKL	3736	8332	199303120522	000	0	***	7	**	**	**	***	***	*****	***	****
JKL	3736	8332	199303120538	010	6	***	7	**	**	**	***	***	*****	***	****
JKL	3736	8332	199303120600	010	4	***	4	F	**	**	27	25	30.22	***	****
JKL	3736	8332	199303120700	000	0	***	2	F	**	**	27	26	30.24	***	****
JKL	3736	8332	199303120800	000	0	***	2	F	**	**	30	26	30.26	***	****
JKL	3736	8332	199303120900	110	4	***	2	F	**	**	32	27	30.24	***	****
JKL	3736	8332	199303120907	100	3	***	4	F	**	**	***	***	*****	***	****
JKL	3736	8332	199303121000	100	4	***	4	F	**	**	35	26	30.23	***	****
JKL	3736	8332	199303121100	310	3	***	6	F	**	**	36	25	30.21	***	****
JKL	3736	8332	199303121200	350	6	***	7	**	**	**	37	23	30.19	***	****
JKL	3736	8332	199303121300	340	3	***	7	**	**	**	38	22	30.18	***	****
JKL	3736	8332	199303121403	300	4	***	7	**	**	**	***	***	*****	***	****
JKL	3736	8332	199303121500	290	3	***	7	**	**	**	39	21	30.12	***	****
JKL	3736	8332	199303121600	300	4	***	7	**	**	**	37	20	30.12	***	****
JKL	3736	8332	199303121700	000	0	***	7	S-	**	**	35	22	30.13	***	****

CALL	LAT	LON	YR--MOD	AHRMN	DIR	SPD	GUS	VSBY	WW	WW	WW	TMP	DEW	SLP	SNDP	WTEQ
JKL	3736	8332	199303121743	000	0	***	2	S-	**	**	***	***	*****	***	****	
JKL	3736	8332	199303121800	020	4	***	2	S-	**	**	33	27	30.13	***	****	
JKL	3736	8332	199303121902	360	8	***	2	S-	**	**	***	***	*****	***	****	
JKL	3736	8332	199303122000	020	9	***	2	S-	**	**	30	28	30.08	***	****	
JKL	3736	8332	199303122100	350	8	***	2	S-	F	**	30	28	30.07	***	****	
JKL	3736	8332	199303122137	010	10	***	1	S-	F	**	***	***	*****	***	****	
JKL	3736	8332	199303122200	***	***	***	***	**	**	**	***	***	*****	***	****	
JKL	3736	8332	199303122300	020	10	***	1	S-	F	**	28	27	30.00	***	****	
JKL	3736	8332	199303130000	360	10	***	1	S-	F	**	28	27	29.95	1	****	
JKL	3736	8332	199303130100	020	13	19	1	S-	F	**	27	26	29.89	***	****	
JKL	3736	8332	199303130200	020	13	23	0	S	F	**	26	25	29.82	***	****	
JKL	3736	8332	199303130300	020	17	***	0	S	F	**	25	24	29.77	1	****	
JKL	3736	8332	199303130400	360	11	23	1	S	**	**	24	22	29.70	***	****	
JKL	3736	8332	199303130500	360	15	23	0	S	**	**	23	22	29.66	***	****	
JKL	3736	8332	199303130536	330	17	24	0	S+	**	**	***	***	*****	***	****	
JKL	3736	8332	199303130600	330	17	32	0	S+	**	**	22	21	29.60	4	****	
JKL	3736	8332	199303130700	350	16	31	0	S+	**	**	21	20	29.56	***	****	
JKL	3736	8332	199303131000	330	13	25	0	S+	**	**	20	18	29.41	***	****	
JKL	3736	8332	199303131100	330	17	31	0	S+	**	**	19	17	29.36	***	****	
JKL	3736	8332	199303131200	330	19	28	0	S+	**	**	19	18	29.33	***	1.2	
JKL	3736	8332	199303131300	340	16	34	0	S+	**	**	20	18	29.32	***	****	
JKL	3736	8332	199303131400	340	18	40	0	S+	BS	**	20	18	29.35	***	****	
JKL	3736	8332	199303131500	320	17	40	0	S	BS	**	19	18	29.41	18	****	
JKL	3736	8332	199303131600	320	17	36	0	S	BS	**	20	18	29.45	***	****	
JKL	3736	8332	199303131700	300	19	38	1	S	BS	**	19	17	29.51	***	****	
JKL	3736	8332	199303131800	310	19	36	1	S	BS	**	18	16	29.56	20	****	
JKL	3736	8332	199303131900	310	17	36	1	S	BS	**	19	15	29.61	***	****	

JKL	3736	8332	199303132000	290	13	21	1	S	BS	**	18	17	29.65	***	****
JKL	3736	8332	199303132031	290	15	25	2	S-	BS	**	***	***	*****	***	****
JKL	3736	8332	199303132100	270	13	33	2	S-	BS	**	19	17	29.68	20	****
JKL	3736	8332	199303132107	290	16	32	1	S	BS	**	***	***	*****	***	****
JKL	3736	8332	199303132200	320	16	36	1	S	BS	**	19	17	29.72	***	****
JKL	3736	8332	199303132210	270	23	***	2	S-	BS	**	***	***	*****	***	****
JKL	3736	8332	199303132214	270	14	26	5	S-	**	**	***	***	*****	***	****
JKL	3736	8332	199303132225	300	11	32	2	S-	BS	**	***	***	*****	***	****
JKL	3736	8332	199303132300	310	11	32	2	S-	BS	**	18	15	29.77	***	****
JKL	3736	8332	199303140000	300	9	19	2	S-	BS	**	17	13	29.80	20	****
JKL	3736	8332	199303140033	260	11	***	1	S-	BS	**	***	***	*****	***	****
JKL	3736	8332	199303140100	270	10	17	1	S-	BS	**	17	15	29.82	***	****
JKL	3736	8332	199303140132	280	16	31	2	S-	BS	**	***	***	*****	***	****
JKL	3736	8332	199303140200	270	11	22	2	S-	BS	**	16	12	29.85	***	****
JKL	3736	8332	199303140300	300	13	21	2	S-	BS	**	14	7	29.89	***	****
JKL	3736	8332	199303140320	260	14	***	2	S-	BS	**	***	***	*****	***	****
JKL	3736	8332	199303140326	270	14	***	1	S-	BS	**	***	***	*****	***	****
JKL	3736	8332	199303140400	280	14	23	2	S-	BS	**	14	10	29.92	***	****
JKL	3736	8332	199303140439	300	15	31	3	S-	BS	**	***	***	*****	***	****
JKL	3736	8332	199303140500	290	17	26	5	BS	**	**	14	6	29.97	***	****
JKL	3736	8332	199303140533	280	11	18	7	**	**	**	***	***	*****	***	****
JKL	3736	8332	199303140600	310	10	21	7	**	**	**	11	4	30.00	20	****

CALL	LAT	LON	YR--MODAHRMN	DIR	SPD	GUS	VSBY	WW	WW	WW	TMP	DEW	SLP	SNDP	WTEQ
JKL	3736	8332	199303140700	280	11	21	7	**	**	**	13	5	30.04	***	****
JKL	3736	8332	199303140800	240	9	***	7	**	**	**	16	6	30.08	***	****
JKL	3736	8332	199303140900	260	11	22	10	**	**	**	19	6	30.10	***	****
JKL	3736	8332	199303140927	260	9	***	10	**	**	**	***	***	*****	***	****
JKL	3736	8332	199303141000	320	9	***	10	**	**	**	20	6	30.13	***	****
JKL	3736	8332	199303141100	260	9	17	10	**	**	**	20	6	30.15	***	****
JKL	3736	8332	199303141200	290	10	19	7	**	**	**	25	7	30.16	***	3.1
JKL	3736	8332	199303141300	250	9	***	7	**	**	**	27	5	30.17	***	****
JKL	3736	8332	199303141400	280	14	26	7	**	**	**	23	3	30.19	***	****
JKL	3736	8332	199303141500	230	11	***	10	**	**	**	26	1	30.20	***	****
JKL	3736	8332	199303141600	260	11	***	15	**	**	**	23	-4	30.21	***	****
JKL	3736	8332	199303141700	290	8	19	20	**	**	**	20	-2	30.23	***	****
JKL	3736	8332	199303141800	270	9	19	20	**	**	**	17	-3	30.27	20	****
JKL	3736	8332	199303141900	260	4	***	20	**	**	**	16	-3	30.30	***	****
JKL	3736	8332	199303142000	220	6	***	25	**	**	**	16	-2	30.32	***	****
JKL	3736	8332	199303142100	210	9	***	25	**	**	**	16	-2	30.34	***	****
JKL	3736	8332	199303142200	210	9	***	25	**	**	**	16	-2	30.35	***	****
JKL	3736	8332	199303142300	220	7	***	25	**	**	**	14	-1	30.37	***	****
JKL	3736	8332	199303150000	230	8	***	25	**	**	**	15	1	30.38	***	****
JKL	3736	8332	199303150100	240	7	***	25	**	**	**	14	2	30.39	***	****
JKL	3736	8332	199303150200	210	6	***	25	**	**	**	13	3	30.41	***	****
JKL	3736	8332	199303150300	200	4	***	25	**	**	**	11	2	30.43	***	****
JKL	3736	8332	199303150400	190	8	***	25	**	**	**	11	2	30.44	***	****
JKL	3736	8332	199303150500	180	10	***	25	**	**	**	12	2	30.47	***	****
JKL	3736	8332	199303150600	170	13	***	25	**	**	**	12	3	30.48	15	****
JKL	3736	8332	199303150700	170	13	***	25	**	**	**	15	3	30.50	***	****

JKL	3736	8332	199303150800	170	9	***	25	**	**	**	19	5	30.50	***	****
JKL	3736	8332	199303150900	140	8	***	25	**	**	**	24	6	30.50	***	****
JKL	3736	8332	199303151000	130	8	***	25	**	**	**	32	9	30.49	***	****
JKL	3736	8332	199303151200	170	9	***	25	**	**	**	41	12	30.46	***	2.5
JKL	3736	8332	199303151300	170	15	***	25	**	**	**	44	14	30.43	***	****
JKL	3736	8332	199303151400	170	11	18	25	**	**	**	43	13	30.41	***	****
LGA	4046	7390	199303120100	300	14	***	25	**	**	**	30	14	30.16	***	****
LGA	4046	7390	199303120200	270	8	***	25	**	**	**	30	13	30.14	***	****
LGA	4046	7390	199303120400	280	11	***	25	**	**	**	30	13	30.14	***	****
LGA	4046	7390	199303120500	280	14	***	25	**	**	**	30	14	30.16	***	****
LGA	4046	7390	199303120600	300	15	***	25	**	**	**	29	15	30.19	***	****
LGA	4046	7390	199303120700	290	11	***	25	**	**	**	29	15	30.22	***	****
LGA	4046	7390	199303120800	310	14	***	20	**	**	**	29	15	30.24	***	****
LGA	4046	7390	199303120900	300	16	***	20	**	**	**	30	14	30.26	***	****
LGA	4046	7390	199303121000	310	13	***	20	**	**	**	31	14	30.27	***	****
LGA	4046	7390	199303121100	310	17	***	20	**	**	**	33	11	30.27	***	****
LGA	4046	7390	199303121200	310	10	19	20	**	**	**	35	10	30.29	***	****
LGA	4046	7390	199303121300	310	7	***	19	**	**	**	36	6	30.27	***	****
LGA	4046	7390	199303121400	310	6	***	20	**	**	**	37	4	30.26	***	****
LGA	4046	7390	199303121600	310	8	***	20	**	**	**	38	8	30.22	***	****
LGA	4046	7390	199303121700	340	7	***	20	**	**	**	38	9	30.23	***	****
LGA	4046	7390	199303121800	080	10	***	20	**	**	**	38	12	30.26	***	****
LGA	4046	7390	199303121900	110	9	***	19	**	**	**	37	20	30.26	***	****

CALL	LAT	LON	YR--MODAHRMN	DIR	SPD	GUS	VSBY	WW	WW	WW	TMP	DEW	SLP	SNDP	WTEQ
LGA	4046	7390	199303122100	170	11	***	15	**	**	**	37	24	30.31	***	****
LGA	4046	7390	199303122200	150	9	***	15	**	**	**	36	26	30.31	***	****
LGA	4046	7390	199303122300	160	11	***	15	**	**	**	36	27	30.29	***	****
LGA	4046	7390	199303130000	140	10	***	15	**	**	**	36	28	30.24	***	****
LGA	4046	7390	199303130100	130	10	***	15	**	**	**	36	26	30.22	***	****
LGA	4046	7390	199303130200	130	13	***	12	**	**	**	35	26	30.21	***	****
LGA	4046	7390	199303130300	110	13	***	4	S-	**	**	33	29	30.19	***	****
LGA	4046	7390	199303130320	130	13	***	2	S-	**	**	***	***	*****	***	****
LGA	4046	7390	199303130400	100	13	***	2	S-	F	**	32	31	30.17	***	****
LGA	4046	7390	199303130500	100	21	***	2	S-	F	**	31	31	30.13	***	****
LGA	4046	7390	199303130555	070	15	***	2	S-	F	**	***	***	*****	***	****
LGA	4046	7390	199303130600	080	13	***	2	S-	F	**	30	30	30.10	***	****
LGA	4046	7390	199303130615	060	14	***	1	S-	F	**	***	***	*****	***	****
LGA	4046	7390	199303130700	060	16	***	1	S-	F	**	30	30	30.08	2	****
LGA	4046	7390	199303130800	060	17	***	1	S	F	**	29	29	30.03	***	****
LGA	4046	7390	199303130900	050	25	33	0	S	F	**	30	30	29.92	***	****
LGA	4046	7390	199303130915	050	31	38	0	S-	F	**	***	***	*****	***	****
LGA	4046	7390	199303130935	060	28	34	0	S	F	**	***	***	*****	***	****
LGA	4046	7390	199303131009	060	30	38	0	S+	F	**	***	***	*****	***	****
LGA	4046	7390	199303131100	060	34	43	0	S+	F	BS	29	29	29.79	***	****
LGA	4046	7390	199303131110	060	37	44	0	S	F	BS	***	***	*****	***	****
LGA	4046	7390	199303131200	060	36	53	0	S	F	BS	29	29	29.68	***	****
LGA	4046	7390	199303131300	060	44	59	0	S+	F	BS	28	28	29.52	***	1.0
LGA	4046	7390	199303131320	060	46	59	0	S+	F	BS	***	***	*****	***	****
LGA	4046	7390	199303131335	060	41	57	0	IP	S+	F	***	***	*****	***	****

LGA	4046	7390	199303131400	060	52	71	0	IP	S	F	28	28	29.29	***	****
LGA	4046	7390	199303131403	060	45	59	0	IP	S	F	***	***	*****	***	****
LGA	4046	7390	199303131430	060	48	68	0	IP	F	BS	***	***	*****	***	****
LGA	4046	7390	199303131440	060	46	63	1	IP	F	**	***	***	*****	***	****
LGA	4046	7390	199303131500	060	49	67	1	IP	F	**	29	29	29.09	***	****
LGA	4046	7390	199303131600	060	46	57	1	IP	F	**	30	30	28.96	11	****
LGA	4046	7390	199303131625	050	33	44	1	IP	F	**	***	***	*****	***	****
LGA	4046	7390	199303131700	050	34	46	1	IP	F	**	31	31	28.90	***	****
LGA	4046	7390	199303131720	040	34	47	2	IP	F	**	***	***	*****	***	****
LGA	4046	7390	199303131730	040	37	47	2	R	F	**	***	***	*****	***	****
LGA	4046	7390	199303131800	040	26	36	2	R-	F	**	33	33	28.82	***	****
LGA	4046	7390	199303131805	040	31	43	4	R-	F	**	***	***	*****	***	****
LGA	4046	7390	199303131900	030	17	39	3	R-	F	**	33	33	28.76	10	****
LGA	4046	7390	199303132000	030	24	37	10	**	**	**	32	32	28.69	***	****
LGA	4046	7390	199303132100	040	33	46	10	**	**	**	33	33	28.60	***	****
LGA	4046	7390	199303132155	120	13	***	5	F	**	**	***	***	*****	***	****
LGA	4046	7390	199303132200	060	17	***	7	**	**	**	34	33	28.53	10	****
LGA	4046	7390	199303132217	180	24	34	5	R-	F	**	***	***	*****	***	****
LGA	4046	7390	199303132300	180	30	39	4	R-	F	**	39	37	28.48	***	****
LGA	4046	7390	199303140000	190	17	31	4	R-	F	**	38	37	28.46	***	****
LGA	4046	7390	199303140100	170	24	34	6	R-	F	**	38	36	28.45	8	****
LGA	4046	7390	199303140101	170	21	31	6	R-	F	**	***	***	*****	***	****
LGA	4046	7390	199303140135	300	15	***	1	S-	F	**	***	***	*****	***	****
LGA	4046	7390	199303140200	300	22	30	1	S-	F	**	29	28	28.47	***	****

CALL	LAT	LON	YR--MODAHRMN	DIR	SPD	GUS	VSBY	WW	WW	WW	TMP	DEW	SLP	SNDP	WTEQ
LGA	4046	7390	199303140300	300	29	36	2	S-	F	**	26	25	28.57	***	****
LGA	4046	7390	199303140315	300	23	40	3	S-	F	**	***	***	*****	***	****
LGA	4046	7390	199303140400	300	26	47	8	**	**	**	22	17	28.70	8	****
LGA	4046	7390	199303140435	300	24	36	1	S-	**	**	***	***	*****	***	****
LGA	4046	7390	199303140500	290	28	37	1	S-	F	**	21	17	28.81	***	****
LGA	4046	7390	199303140540	300	26	33	4	S-	**	**	***	***	*****	***	****
LGA	4046	7390	199303140600	300	26	46	10	S-	**	**	22	15	28.91	***	****
LGA	4046	7390	199303140700	290	39	49	12	**	**	**	22	11	29.03	9	****
LGA	4046	7390	199303140800	290	41	52	15	**	**	**	20	7	29.15	***	****
LGA	4046	7390	199303140900	290	29	45	20	**	**	**	21	8	29.26	***	****
LGA	4046	7390	199303141000	290	31	39	12	**	**	**	21	9	29.35	***	****
LGA	4046	7390	199303141100	280	33	43	15	**	**	**	22	7	29.41	***	****
LGA	4046	7390	199303141200	270	25	39	15	**	**	**	22	6	29.47	***	****
LGA	4046	7390	199303141300	290	25	40	15	**	**	**	23	6	29.52	8	3.7
LGA	4046	7390	199303141400	290	26	38	15	**	**	**	24	6	29.55	***	****
LGA	4046	7390	199303141500	280	26	38	15	**	**	**	24	5	29.62	***	****
LGA	4046	7390	199303141600	300	26	36	15	**	**	**	24	5	29.68	***	****
LGA	4046	7390	199303141700	300	21	33	15	**	**	**	24	7	29.74	***	****
LGA	4046	7390	199303141800	300	24	32	15	**	**	**	24	6	29.80	***	****
LGA	4046	7390	199303141900	310	24	38	19	**	**	**	23	4	29.86	8	****
LGA	4046	7390	199303142000	310	23	37	20	**	**	**	22	0	29.93	***	****
LGA	4046	7390	199303142100	300	30	39	20	**	**	**	20	-1	30.00	***	****
LGA	4046	7390	199303142200	300	26	36	20	**	**	**	19	-1	30.05	***	****
LGA	4046	7390	199303142300	310	22	***	20	**	**	**	19	-1	30.08	***	****

LGA	4046	7390	199303150000	290	21	36	20	**	**	**	18	-3	30.13	***	****
LGA	4046	7390	199303150100	300	18	36	19	**	**	**	18	-3	30.18	8	****
LGA	4046	7390	199303150200	300	22	31	20	**	**	**	17	-2	30.21	***	****
LGA	4046	7390	199303150300	290	18	29	20	**	**	**	16	-3	30.24	***	****
LGA	4046	7390	199303150400	310	19	26	20	**	**	**	16	-1	30.29	***	****
LGA	4046	7390	199303150500	300	15	***	20	**	**	**	15	0	30.34	***	****
LGA	4046	7390	199303150600	300	17	***	20	**	**	**	15	1	30.39	***	****
LGA	4046	7390	199303150700	300	18	26	19	**	**	**	15	1	30.42	8	****
LGA	4046	7390	199303150800	300	16	***	20	**	**	**	17	1	30.47	***	****
LGA	4046	7390	199303150900	300	16	***	20	**	**	**	18	5	30.49	***	****
LGA	4046	7390	199303151000	310	17	***	20	**	**	**	19	5	30.51	***	****
LGA	4046	7390	199303151100	300	17	***	20	**	**	**	22	6	30.52	***	****
LGA	4046	7390	199303151300	270	15	***	19	**	**	**	26	7	30.52	7	3.4
LGA	4046	7390	199303151400	290	18	***	20	**	**	**	27	5	30.52	***	****
LGA	4046	7390	199303151500	260	16	***	20	**	**	**	28	7	30.54	***	****
CON	4312	7150	199303120000	310	21	31	7	**	**	**	22	-1	29.96	***	****
CON	4312	7150	199303120100	300	16	24	10	**	**	**	21	-2	29.99	***	****
CON	4312	7150	199303120200	310	15	25	10	**	**	**	19	-1	29.99	***	****
CON	4312	7150	199303120400	330	11	***	10	**	**	**	16	-1	30.02	***	****
CON	4312	7150	199303120500	330	15	***	10	**	**	**	14	-3	30.05	***	****
CON	4312	7150	199303120600	310	13	***	25	**	**	**	12	-5	30.08	***	****
CON	4312	7150	199303120700	320	17	25	25	**	**	**	10	-11	30.13	7	****
CON	4312	7150	199303120800	310	21	28	25	**	**	**	9	-11	30.17	***	****
CON	4312	7150	199303120900	310	25	32	25	**	**	**	11	-11	30.19	***	****
CON	4312	7150	199303121000	310	21	25	25	**	**	**	12	-10	30.20	***	****

CALL	LAT	LON	YR--MODAHRMN	DIR	SPD	GUS	VSBY	WW	WW	WW	TMP	DEW	SLP	SNDP	WTEQ
CON	4312	7150	199303121100	320	17	23	30	**	**	**	14	-9	30.22	***	****
CON	4312	7150	199303121200	330	16	24	30	**	**	**	18	-6	30.23	***	****
CON	4312	7150	199303121300	300	15	22	30	**	**	**	20	-9	30.22	***	2.2
CON	4312	7150	199303121400	340	15	***	30	**	**	**	22	-8	30.22	***	****
CON	4312	7150	199303121600	300	14	***	30	**	**	**	24	-9	30.23	***	****
CON	4312	7150	199303121700	330	13	***	30	**	**	**	24	-9	30.23	***	****
CON	4312	7150	199303121800	330	8	***	7	**	**	**	22	-9	30.25	***	****
CON	4312	7150	199303121900	340	4	***	7	**	**	**	20	-10	30.29	7	****
CON	4312	7150	199303122100	040	3	***	7	**	**	**	12	0	30.33	***	****
CON	4312	7150	199303122200	000	0	***	7	**	**	**	14	-2	30.34	***	****
CON	4312	7150	199303122300	000	0	***	7	**	**	**	12	3	30.34	***	****
CON	4312	7150	199303130000	060	3	***	7	**	**	**	12	1	30.31	***	****
CON	4312	7150	199303130100	230	4	***	10	**	**	**	13	3	30.31	***	****
CON	4312	7150	199303130200	000	0	***	10	**	**	**	12	2	30.29	***	****
CON	4312	7150	199303130300	030	3	***	10	**	**	**	13	2	30.27	***	****
CON	4312	7150	199303130400	060	4	***	10	**	**	**	13	1	30.28	***	****
CON	4312	7150	199303130500	000	0	***	10	**	**	**	13	-1	30.27	***	****
CON	4312	7150	199303130600	350	4	***	15	**	**	**	13	2	30.26	***	****
CON	4312	7150	199303130700	310	6	***	20	**	**	**	13	2	30.26	6	****
CON	4312	7150	199303130800	300	7	***	20	**	**	**	14	3	30.24	***	****
CON	4312	7150	199303131100	340	7	***	5	S-	**	**	21	11	30.15	***	****
CON	4312	7150	199303131120	040	13	***	1	S-	**	**	***	***	***	***	****
CON	4312	7150	199303131200	040	11	***	1	S-	F	**	22	17	30.05	***	****

CON	4312	7150	199303131225	040	11	***	1	S-	F	**	***	***	*****	***	****
CON	4312	7150	199303131300	040	11	***	1	S	F	**	21	18	30.00	***	2.6
CON	4312	7150	199303131340	050	14	***	0	S	F	**	***	***	*****	***	****
CON	4312	7150	199303131400	040	14	22	1	S	F	**	20	18	29.90	***	****
CON	4312	7150	199303131500	040	16	24	1	S	F	**	21	18	29.76	***	****
CON	4312	7150	199303131600	040	16	23	0	S	F	**	21	19	29.61	11	****
CON	4312	7150	199303131700	050	17	24	0	S+	F	**	22	20	29.46	***	****
CON	4312	7150	199303131800	050	23	37	0	S	F	BS	24	23	29.31	***	****
CON	4312	7150	199303131900	070	22	36	0	S	F	BS	24	24	29.22	19	****
CON	4312	7150	199303132000	040	17	25	1	S	F	**	24	23	29.15	***	****
CON	4312	7150	199303132100	030	17	28	1	S	F	**	22	21	29.04	***	****
CON	4312	7150	199303132200	030	17	32	0	S	F	**	22	20	28.83	22	****
CON	4312	7150	199303132211	030	18	29	1	S-	F	**	***	***	*****	***	****
CON	4312	7150	199303132300	030	21	31	7	IP	S-	**	23	19	28.80	***	****
CON	4312	7150	199303132306	040	17	26	2	AP-	S-	**	***	***	*****	***	****
CON	4312	7150	199303132324	030	23	37	1	AP-	S-	F	***	***	*****	***	****
CON	4312	7150	199303140000	040	18	30	3	AP-	S-	F	23	19	28.68	***	****
CON	4312	7150	199303140031	050	17	26	1	S-	F	**	***	***	*****	***	****
CON	4312	7150	199303140100	060	21	25	2	S-	F	**	23	19	28.63	22	****
CON	4312	7150	199303140129	040	7	17	10	S-	**	**	***	***	*****	***	****
CON	4312	7150	199303140200	050	8	***	10	S-	**	**	23	18	28.60	**	****
CON	4312	7150	199303140300	360	10	***	1	S-	**	**	23	20	28.56	**	****
CON	4312	7150	199303140400	360	7	***	1	S-	**	**	22	20	28.52	22	****
CON	4312	7150	199303140420	010	7	***	2	S-	F	**	***	***	*****	***	****
CON	4312	7150	199303140500	310	11	***	2	S-	F	**	22	21	28.53	***	****
CON	4312	7150	199303140535	310	11	***	1	S-	F	**	***	***	*****	***	****

CALL	LAT	LON	YR--MODAHRMN	DIR	SPD	GUS	VSBY	WW	WW	WW	TMP	DEW	SLP	SNDP	WTEQ
CON	4312	7150	199303140600	320	13	***	1	S-	F	**	22	20	28.54	***	****
CON	4312	7150	199303140700	310	18	24	2	S-	F	**	22	18	28.59	23	****
CON	4312	7150	199303140724	310	23	36	3	S-	F	**	***	***	*****	***	****
CON	4312	7150	199303140800	310	18	29	10	S-	**	**	21	14	28.65	***	****
CON	4312	7150	199303140900	300	25	41	10	S-	**	**	20	11	28.74	***	****
CON	4312	7150	199303141000	300	30	39	10	S-	**	**	20	8	28.84	17	****
CON	4312	7150	199303141100	300	25	44	5	S-	**	**	20	8	28.94	***	****
CON	4312	7150	199303141200	290	25	34	10	**	**	**	22	6	29.03	***	****
CON	4312	7150	199303141300	300	30	41	10	**	**	**	19	3	29.11	17	4.5
CON	4312	7150	199303141400	290	23	34	10	**	**	**	20	3	29.19	***	****
CON	4312	7150	199303141500	300	22	37	10	**	**	**	19	3	29.27	***	****
CON	4312	7150	199303141600	290	19	37	10	**	**	**	17	-1	29.36	***	****
CON	4312	7150	199303141700	290	23	41	6	BS	**	**	16	-2	29.44	***	****
CON	4312	7150	199303141800	290	22	37	10	**	**	**	16	-2	29.52	***	****
CON	4312	7150	199303141900	300	19	28	7	**	**	**	14	-2	29.61	15	****
CON	4312	7150	199303142000	300	17	29	7	**	**	**	14	-3	29.68	***	****
CON	4312	7150	199303142100	290	14	***	7	**	**	**	13	-2	29.73	***	****
CON	4312	7150	199303142200	300	18	28	7	**	**	**	13	-2	29.77	***	****
CON	4312	7150	199303142300	320	13	***	7	**	**	**	11	-3	29.81	***	****
CON	4312	7150	199303150000	310	18	24	7	**	**	**	12	-6	29.86	***	****
CON	4312	7150	199303150100	320	18	23	7	**	**	**	10	-11	29.92	***	****
CON	4312	7150	199303150200	310	15	***	7	**	**	**	9	-13	29.97	***	****

CON	4312	7150	199303150300	300	13	23	7	**	**	**	7	-13	30.01	***	****
CON	4312	7150	199303150400	310	9	***	7	**	**	**	5	-14	30.07	***	****
CON	4312	7150	199303150500	310	6	***	7	**	**	**	2	-15	30.12	***	****
CON	4312	7150	199303150600	300	14	***	15	**	**	**	2	-17	30.17	***	****
CON	4312	7150	199303150700	300	11	***	20	**	**	**	2	-17	30.23	15	****
CON	4312	7150	199303150800	300	11	21	25	**	**	**	5	-15	30.27	***	****
CON	4312	7150	199303150900	300	18	25	25	**	**	**	8	-14	30.31	***	****
CON	4312	7150	199303151000	310	17	25	25	**	**	**	11	-12	30.34	***	****
CON	4312	7150	199303151100	300	14	25	25	**	**	**	14	-10	30.36	***	****
CON	4312	7150	199303151300	300	11	19	25	**	**	**	19	-9	30.37	***	****
CON	4312	7150	199303151400	280	13	19	25	**	**	**	21	-10	30.38	***	****
CON	4312	7150	199303151500	290	14	22	25	**	**	**	22	-9	30.40	***	****

DATA LIST #2

CALL = CALL LETTERS
LAT = LATITUDE
LON = LONGITUDE
YR--MODAHRMN = YEAR-MONTH-DAY-HOUR-MINUTE IN LST (CONVERTED FROM GMT USING
LONGITUDE OF THE STATION DUE TO LARGE NUMBER OF STATIONS IN DATASET)
DIR = WIND DIRECTION (990 = VARIABLE)
SPD & GUS = WIND SPEED & GUST IN MPH
VSBY = VISIBILITY IN STATUTE MILES--ROUNDED
WW = CURRENT WEATHER INDICATORS FROM 'AIRWAYS' TYPE OBSERVATIONS
TMP & DEW = TEMP & DEW POINT IN FAHRENHEIT
SLP = SEA LEVEL PRESSURE IN INCHES & HUNDREDTHS
SNDP = SNOW DEPTH IN INCHES
WTEQ = WATER EQUIVALENT OF SNOW ON GROUND IN INCHES & TENTHS
* INDICATES ELEMENT NOT REPORTED
VALUES WERE CONVERTED FROM METRIC TO ENGLISH UNITS

WER = ILE D'ORLEANS, CN
WTG = POINTE DES MONTS, CN
WSG = CAP CHAT, CN
YID = DIGBY ARPT, CN
PBI = WEST PALM BEACH, FL
VRB = VERO BEACH, FL
BQK = BRUNSWICK/GLYNCO, GA
S58 = SOUTH TIMBALIER, LA
5R0 = EAST ADDITION B323, TX
7R8 = SOUTH MARSH ISLAND, LA
GSB = SEYMOUR-JOHNSON AFB, NC
LGA = NEW YORK/LA GUARDIA, NY
PVC = PROVINCETOWN, MA
BOS = BOSTON/LOGAN INTL, MA
LNS = LANCASTER, PA
MWN = MOUNT WASHINGTON, NH
FPSN = FRYING PAN SHOALS, NC
ALSN = AMBROSE, NY
MISM = MATINICUS ISLE, ME

ALL OTHERS = SHIPS AT SEA

CALL	LAT	LON	YR--MODAHRMN	DIR	SPD	GUS	VSBY	WW	WW	WW	TMP	DEW	SLP	SNDP	WTEQ
WER	4700	7082	199303140100	050	56	76	****	**	**	**	21	20	29.05	***	****
WER	4700	7082	199303140200	050	61	77	****	**	**	**	21	14	28.90	***	****
WER	4700	7082	199303140300	050	61	77	****	**	**	**	21	14	28.90	***	****
WER	4700	7082	199303140400	050	60	72	****	**	**	**	21	18	28.76	***	****
WER	4700	7082	199303140500	050	54	70	****	**	**	**	21	19	28.77	***	****
WTG	4919	6738	199303140700	050	57	70	9	**	**	**	19	16	29.01	***	****
WTG	4919	6738	199303140800	050	55	74	9	**	**	**	18	15	28.94	***	****
WSG	4905	6673	199303140600	050	64	72	****	**	**	**	18	16	29.06	***	****
WSG	4905	6673	199303140700	050	68	83	****	**	**	**	18	16	28.93	***	****
WSG	4905	6673	199303140900	050	68	79	****	**	**	**	19	18	28.74	***	****
WSG	4905	6673	199303141000	050	61	76	0	**	**	**	19	18	28.68	***	****

CALL	LAT	LON	YR--MODAHRMN	DIR	SPD	GUS	VSBY	WW	WW	WW	TMP	DEW	SLP	SNDP	WTEQ
WSG	4905	6673	199303141100	040	57	70	1	**	**	**	18	16	28.65	***	****
WSG	4905	6673	199303141300	030	60	70	1	**	**	**	18	16	28.66	***	****
YID	4433	6578	199303132300	120	46	71	0	IP	S	ZR-	28	28	****	***	****
PBI	2641	8012	199303130439	200	32	71	1	T	RW	F	***	***	****	***	****
VRB	2739	8042	199303130427	270	57	83	0	T	RW	**	***	***	****	***	****
BQK	3115	8147	199303131300	230	46	75	7	S-	**	**	40	30	****	***	****
S58	2832	9058	199303121437	030	57	77	0	R+	F	**	60	60	****	***	****
S58	2832	9058	199303121600	020	81	98	0	R+	F	**	52	52	****	***	****
5R0	2813	9375	199303121200	020	72	86	0	R	F	**	***	***	****	***	****
5R0	2813	9375	199303121500	010	75	86	1	R	F	**	***	***	****	***	****
7R8	2818	9198	199303121507	360	81	92	0	R	F	**	51	49	****	***	****
7R8	2818	9198	199303130500	320	69	81	7	**	**	**	47	33	****	***	****
GSB	3520	7797	199303131742	210	37	71	6	R-	**	**	***	***	****	***	****
LGA	4046	7390	199303131400	060	52	71	0	IP	S	F	28	28	29.29	***	****
PVC	4204	7022	199303140700	210	47	81	7	**	**	**	32	21	****	***	****
BOS	4222	7103	199303131613	060	53	70	0	S+	BS	**	***	***	****	***	****
BOS	4222	7103	199303131800	060	54	71	0	T	S+	BS	31	31	29.16	***	****
LNS	4007	7630	199303131400	040	40	74	1	S-	ZR-	**	26	26	****	***	****
MWN	4416	7130	199303120100	270	81	***	31	**	**	**	-12	-20	****	8	****
MWN	4416	7130	199303120300	270	90	106	31	BS	**	**	-13	-25	****	***	****
MWN	4416	7130	199303120400	270	90	***	31	**	**	**	-13	-25	****	***	****
MWN	4416	7130	199303120600	270	71	81	60	BS	**	**	-19	-22	****	***	****
MWN	4416	7130	199303120700	270	71	***	47	**	**	**	-19	-22	****	7	****
MWN	4416	7130	199303120900	270	66	82	60	**	**	**	-10	-25	****	***	****
MWN	4416	7130	199303131800	090	110	144	0	S-	F	BS	-1	-1	****	***	****
MWN	4416	7130	199303131900	090	110	***	0	**	**	**	-1	-1	****	7	****
MWN	4416	7130	199303132100	080	83	107	0	S-	F	BS	1	1	****	***	****
MWN	4416	7130	199303141200	270	70	78	0	F	BS	**	-10	-10	****	***	****
MWN	4416	7130	199303141300	270	70	***	0	**	**	**	-10	-10	****	7	****
MWN	4416	7130	199303141500	250	87	101	0	F	BS	**	-15	-15	****	***	****
MWN	4416	7130	199303141800	260	101	110	0	F	**	**	-17	-17	****	***	****
MWN	4416	7130	199303141900	260	101	***	0	**	**	**	-17	-17	****	7	****
MWN	4416	7130	199303142100	270	83	95	0	F	**	**	-17	-17	****	***	****

MWN	4416	7130	199303150000	270	81	95	0	F	**	**	**	-20	-20	*****	***	****
MWN	4416	7130	199303150100	270	81	***	0	**	**	**	**	-20	-20	*****	7	****
MWN	4416	7130	199303150300	270	71	78	0	F	**	**	**	-24	-24	*****	***	****
MWN	4416	7130	199303150400	270	71	***	0	**	**	**	**	-24	-24	*****	***	****
MWN	4416	7130	199303150600	270	82	89	1	F	**	**	**	-25	-25	*****	***	****
MWN	4416	7130	199303150700	220	82	***	0	**	**	**	**	-25	-25	*****	7	****
MWN	4416	7130	199303150900	270	78	90	1	F	**	**	**	-19	-19	*****	***	****
MWN	4416	7130	199303151200	270	64	78	0	F	**	**	**	-14	-14	*****	***	****
FPSN	3329	7758	199303131500	220	70	***	****	**	**	**	**	49	***	28.97	***	****
FPSN	3329	7758	199303131700	230	70	***	****	**	**	**	**	45	***	29.07	***	****
ALSN	4028	7383	199303131600	070	71	***	****	**	**	**	**	34	***	28.81	***	****
MISM	4347	6885	199303132000	070	72	***	****	**	**	**	**	29	***	29.08	***	****
SHIP	3018	8060	199303130700	220	70	***	6	**	**	**	**	65	62	29.09	***	****
KPSB	2548	8440	199303130900	270	75	***	6	**	**	**	**	78	70	29.83	***	****
SHIP	3124	7980	199303131000	220	82	***	1	**	**	**	**	63	48	29.03	***	****
SHIP	3136	7950	199303131300	250	77	***	1	**	**	**	**	49	41	29.13	***	****

CALL	LAT	LON	YR--MODAHRMN	DIR	SPD	GUS	VSBY	WW	WW	WW	TMP	DEW	SLP	SNDP	WTEQ
SHIP	3154	7900	199303131600	250	74	***	1	**	**	**	41	39	29.26	***	****
WMBQ	4742	6860	199303131600	150	71	***	1	**	**	**	67	66	*****	***	****
SHIP	3200	7850	199303131900	260	71	***	1	**	**	**	40	37	29.36	***	****
GCSW	3448	7520	199303131900	220	81	***	2	**	**	**	50	48	28.81	***	****
WMBQ	3742	6830	199303131900	150	71	***	1	**	**	**	66	64	29.15	***	****
ZCAN	4200	7010	199303131900	090	75	***	1	**	**	**	36	***	*****	***	****
VCRJ	4230	6990	199303131900	080	75	***	0	**	**	**	36	36	29.03	***	****
ELNB	2554	7540	199303132200	270	78	***	6	**	**	**	72	70	29.90	***	****
DQFT	2924	7850	199303140100	240	98	***	6	**	**	**	49	34	29.90	***	****
CGDX	4848	6760	199303140700	050	75	***	0	**	**	**	19	16	28.84	***	****
WCJY	3612	6690	199303140800	200	75	***	2	**	**	**	57	52	29.44	***	****
WCJY	3618	6720	199303141400	250	77	***	2	**	**	**	54	43	29.59	***	****
WMBQ	3706	6740	199303141400	250	74	***	0	**	**	**	51	50	29.62	***	****
WMBQ	3736	6750	199303151000	310	74	***	1	**	**	**	41	32	30.33	***	****

DATA LIST #3

CALL = CALL LETTERS

LAT = LATITUDE

LON = LONGITUDE

YR--MODAHRMN = YEAR-MONTH-DAY-HOUR-MINUTE IN LST (CONVERTED FROM GMT USING LONGITUDE OF THE STATION DUE TO LARGE NUMBER OF STATIONS IN DATASET)

DIR = WIND DIRECTION (990 = VARIABLE)

SPD & GUS = WIND SPEED & GUST IN MPH

VSBY = VISIBILITY IN STATUTE MILES--ROUNDED

WW = CURRENT WEATHER INDICATORS FROM 'AIRWAYS' TYPE OBSERVATIONS

TMP & DEW = TEMP & DEW POINT IN FAHRENHEIT

SLP = SEA LEVEL PRESSURE IN INCHES & HUNDREDTHS

WAVE = WAVE HEIGHT IN FEET

SWL = SWELL HEIGHT IN FEET

* INDICATES ELEMENT NOT REPORTED
 VALUES WERE CONVERTED FROM METRIC TO ENGLISH UNITS

CALL	LAT	LON	YR--MODAHRMN	DIR	SPD	GUS	VSBY	WW	WW	WW	TMP	DEW	SLP	WAVE	SWL
8PAO	4306	6560	199303151400	280	34	***	6	**	**	**	19	10	30.21	16	20
C6KD	2618	7950	199303131900	270	40	***	2	**	**	**	63	59	29.86	23	23
DQFT	2924	7850	199303140100	240	98	***	6	**	**	**	49	34	29.90	7	20
ELEI	3300	7460	199303131300	180	62	***	1	**	**	**	68	64	29.09	21	20
ELEI	3306	7460	199303131900	210	63	***	1	**	**	**	68	63	29.18	23	25
ELEI	3248	7440	199303140100	240	67	***	1	**	**	**	65	59	29.49	23	25
ELNB	2554	7540	199303132200	270	78	***	6	**	**	**	72	70	29.90	21	16
ELNB	2706	7570	199303141000	300	6	***	2	**	**	**	63	61	29.66	20	23
ELNB	2830	7650	199303142200	290	34	***	2	**	**	**	59	41	30.31	20	23
FNEF	3900	7400	199303131900	120	39	***	6	**	**	**	52	40	28.48	20	***
GCSW	3512	7520	199303131300	150	69	***	0	**	**	**	65	64	28.74	16	21
GCSW	3448	7520	199303131900	220	81	***	2	**	**	**	50	48	28.81	52	***
GCSW	3442	7520	199303140100	250	60	***	2	**	**	**	39	35	29.28	41	***
GCSW	3430	7550	199303140700	260	51	***	6	**	**	**	38	35	29.74	26	20
NIKA	2548	8690	199303130900	340	46	***	6	**	**	**	52	34	29.99	15	34
NIKA	2530	8660	199303131200	340	52	***	6	**	**	**	55	46	30.07	20	38
NIKA	2512	8630	199303131500	310	52	***	6	**	**	**	59	48	30.04	20	23
NIKA	2506	8630	199303132100	330	40	***	6	**	**	**	59	48	30.12	18	20
NIKA	2518	8650	199303140000	330	34	***	6	**	**	**	59	48	30.13	16	20
PEWF	3736	6520	199303151400	300	41	***	6	**	**	**	41	27	30.26	10	26
PHUH	3230	7870	199303130700	170	52	***	2	**	**	**	66	63	29.12	20	16
PITB	2436	8550	199303130600	310	63	***	6	**	**	**	62	47	30.00	26	***
PITB	2442	8640	199303131800	310	56	***	12	**	**	**	61	48	30.09	26	***
PJNG	2730	9150	199303121800	340	69	***	2	**	**	**	53	53	29.60	20	20
PJNG	2736	9230	199303130900	330	43	***	12	**	**	**	49	35	30.19	20	***
PJNG	2742	9250	199303131200	310	51	***	12	**	**	**	47	35	30.21	20	***
PJNG	2742	9280	199303131500	320	38	***	12	**	**	**	48	34	30.21	16	20

CALL	LAT	LON	YR--MODAHRMN	DIR	SPD	GUS	VSBY	WW	WW	WW	TMP	DEW	SLP	WAVE	SWL
SHIP	3112	7550	199303130700	130	38	***	12	**	**	**	72	65	***	16	20
SHIP	2530	8660	199303131200	340	52	***	6	**	**	**	55	46	30.07	20	38
SHIP	2824	7880	199303131200	250	60	***	2	**	**	**	66	***	29.44	20	***
SHIP	3136	7950	199303131300	250	77	***	1	**	**	**	49	41	29.13	20	***
SHIP	3154	7900	199303131600	250	74	***	1	**	**	**	41	39	29.26	26	***
SHIP	3200	7850	199303131900	260	71	***	1	**	**	**	40	37	29.36	31	***
SHIP	3200	7800	199303132200	260	66	***	1	**	**	**	44	34	29.53	31	***
VCRJ	4230	6990	199303131900	080	75	***	0	**	**	**	36	36	29.03	***	30
VCRJ	4242	7020	199303141300	280	57	***	6	**	**	**	27	21	29.09	5	25
VRKE	2512	8610	199303141800	310	29	***	6	**	**	**	70	52	30.36	23	***
VRKE	2230	8540	199303150600	050	21	***	12	**	**	**	66	57	30.34	20	***
VSBN	4100	6510	199303142000	240	69	***	1	**	**	**	38	37	29.58	33	***
WSBZ	3912	6760	199303151300	300	34	***	6	**	**	**	29	***	30.36	8	20
WCJY	3536	6540	199303132000	140	52	***	6	**	**	**	68	59	29.65	16	23
WCJY	3612	6690	199303140800	200	75	***	2	**	**	**	57	52	29.44	57	66
WCJY	3618	6720	199303141400	250	77	***	2	**	**	**	54	43	29.59	56	62

WCJY	3730	6880	199303150700	320	40	***	12	**	**	**	38	***	30.27	33	33
WMBQ	4742	6860	199303131600	150	71	***	1	**	**	**	67	66	*****	15	20
WMBQ	3742	6830	199303131900	150	71	***	1	**	**	**	66	64	29.15	28	25
WMBQ	3706	6740	199303141400	250	74	***	0	**	**	**	51	50	29.62	41	44
WMRU	3018	7140	199303140700	250	46	***	12	**	**	**	61	50	29.92	8	36
WMRU	3130	7200	199303141900	230	40	***	12	**	**	**	55	48	30.09	3	20
WRYX	3936	7250	199303131300	080	49	***	0	**	**	**	36	30	29.24	13	20
WVDG	3512	6990	199303140100	220	69	***	1	**	**	**	70	70	29.25	7	26
WVDG	3500	6810	199303141300	220	46	***	2	**	**	**	60	52	29.74	5	20
WZJB	2942	7380	199303141300	270	40	***	12	**	**	**	63	54	30.08	11	23
WZJE	2900	7940	199303130700	210	40	***	6	**	**	**	69	66	29.28	8	20
WZJE	2642	7580	199303131900	270	39	***	6	**	**	**	67	61	29.83	10	20
WZJF	2924	7760	199303131600	250	63	***	2	**	**	**	68	57	29.49	20	25
XCBR	2624	9140	199303122100	330	56	***	0	**	**	**	57	54	29.74	16	20
XCBR	2624	9140	199303130000	330	54	***	0	**	**	**	53	48	29.93	16	20
XCBR	2624	9180	199303130600	340	51	***	1	**	**	**	52	41	30.05	***	20
XCBR	2636	9210	199303130900	330	44	***	2	**	**	**	52	37	30.17	16	20
XWZJ	2800	7750	199303131300	230	41	***	6	**	**	**	70	61	29.50	10	20