

**National Climatic Data Center
DATA DOCUMENTATION**

FOR

DATA SET 6352 (DSI-6352)

INTEGRATED GLOBAL RADIOSONDE ARCHIVE Monthly Means (V1.0)

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1. Abstract:

This dataset contains monthly means of geopotential height, temperature, zonal wind, and meridional wind derived from the Integrated Global Radiosonde Archive (IGRA, DSI-6351). IGRA consists of radiosonde and pilot balloon observations at over 1500 globally distributed stations, and monthly means are available for the surface and mandatory levels at many of these stations. The period of record varies from station to station, with many extending from 1970 to present. Monthly means are computed separately for the nominal times of 0000 and 1200 UTC, considering data within two hours of each nominal time. A mean is provided, along with the number of values used to calculate it, whenever there are at least 10 values for a particular station, month, nominal time, and level. The monthly-mean files are updated on the fifth day of each month and are available online at no charge. Information on IGRA, including relevant metadata, is available in Durre et al. (2006) and at www.ncdc.noaa.gov/oa/cab/igra/index.php.

2. Element Names and Definitions:

Data are stored in files whose names contain the string 6352_VVVV_HHz, where VVVV = variable and HH = nominal hour. Possible values for VVVV are ghgt = geopotential height, temp = temperature, uwnd = zonal wind component, and vwnd = meridional wind component. Possible values for HH are 00 and 12. Each file contains data from all stations for one combination of variable and nominal hour during a specified period of time. Each record within a file contains the monthly mean for one station, year, and month. Fields are separated by single spaces.

Note that the format stored in NCDC's archive uses a six-digit station number in which the first five digits correspond to the WMO number, and the last digit is zero, whereas the IGRA files available via FTP contain only the five-digit WMO station number. This documentation provides specifications for the archived format. For details on the FTP format, see the relevant readme file at www1.ncdc.noaa.gov/pub/data/igra/readme.txt.

FIELD	1	2	3	4	5	6
ELEMENT	STN NUM	YEAR	MONTH	LEVEL	MEAN	NUM VALS
#CHARS	XXXXXX	XXXX	XX	XXXX	XXXXX	XX
REC. POS.	1-6	8-11	13-14	16-19	21-25	27-28

Position: 1-6
Element: STN NUM
Definition: STATION NUMBER -- The station number is the five-digit WMO number with a "0" appended as the sixth digit.
Range of values is 000000-999999.

Position: 8-11
Element: YEAR
Definition: YEAR -- The year expressed at the nominal hour of observation (UTC).
Range of values is 1947 through the current year processed.

Position: 13-14
Element: MONTH
Definition: MONTH -- The month expressed at the Nominal hour of observation (UTC).
Range of values is 01-12.

Position: 16-19
Element: LEVEL
Definition: LEVEL -- Atmospheric pressure at the current level in hectopascals (millibars). The surface level is identified by 9999.
Range of values is 9999, 1000, 925, 850, 700, 500, 400, 300, 250, 200, 150, 100, 70, 50, 30, 20, and 10.

Position: 21-25
Element: MEAN
Definition: MEAN -- The average of all available observations for the identified element (specified in the filename), nominal hour (specified in the filename), month (specified in the record), and level (specified in the record). Means are given in units of meters for geopotential height, degrees C * 10 for temperature, and (m/s) * 10 for zonal and meridional wind.
Range of values is -1000 to 70000 for geopotential height, -1200 to 700 for temperature, and -1500 to 1500 for zonal and meridional wind.

Position: 27-28
Element: NUM VALS
Definition: NUM VALS -- Number of values used to compute the corresponding mean.
Range of values is 10-31.

3. **Start Date:** 19479999.

4. **Stop Date:** Ongoing.

5. **Coverage:** Global.

a. Southernmost Latitude: 90S

b. Northernmost Latitude: 90N

c. Westernmost Longitude: 180W

d. Easternmost Longitude: 180E

6. **How to Order Data:**

Data are available at www.ncdc.noaa.gov. For information on receiving these data in other media, contact NCDC's Climate Services.

Phone: 828-271-4800

FAX: 828-271-4876

E-mail: NCDC.Orders@noaa.gov

7. **Archiving Data Center:**

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Federal Building

151 Patton Avenue

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8. **Technical Contact:**

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9. **Known Uncorrected Problems:** The following data problems in the individual soundings might also be reflected in the monthly means and will be addressed at the time of future enhancements of IGRA:

a. Geopotential heights prior to 1950 at some Russian stations were expressed in geometric meters rather than geopotential meters in the relevant source dataset (DSI-6310).

b. At certain stations during certain months, wind speed may be incorrectly reported in knots or in hundredths of meters per second.

For the most up-to-date information on the status of the dataset, see the status report at ww1.ncdc.noaa.gov/pub/data/igra/status.txt.

10. **Quality Statement:**

Quality control procedures have been applied to the individual soundings from which the monthly means were computed. No additional quality control has been applied to the monthly means.

The IGRA quality assurance system consists of a series of specialized algorithms that are applied successively. The procedures can be grouped into seven general categories: fundamental "sanity" checks, checks on the plausibility and temporal consistency of surface elevation, internal consistency checks, checks for the repetition of values, climatologically-based checks, checks on the vertical and temporal consistency of temperature, and data completeness checks (Durre et al. 2006). Each successive check makes a binary decision on the quality of a value, level, or sounding; either the data item passes the check and remains available, or it is identified as erroneous and thus set to missing. Although all variables are quality-assured, temperature, pressure, and geopotential height receive somewhat greater scrutiny than the other variables.

11. Essential Companion Datasets: Individual IGRA soundings are available in DSI-6351.

12. References:

Durre, I., R. S. Vose, and D. B. Wuertz, 2006: Overview of the Integrated Global Radiosonde Archive. *Journal of Climate*, 19, 53-68.