Description

Subroutine RPDDLY reads data for one day for all stations of a
specified data type for data types that are stored on the Preprocessor
Data Base (PPDB) by day.

Calling Sequence

CALL RPDDLY (ITYPE,IDATE,IRETRN,LPNTRS,IPNTRS,LPFILL,LDATA,IDATA,
            LDFILL,NUMSTA,MSNG,LENDAT,IDATES,ISTAT)

Argument List

Argument	Input/ Output	Type	Dimension	Description
ITYPE	Input	A4	1	Data type code 1/
IDATE	Input	I*4	1	Julian day for data to be read 5/
IRETRN	Input	I*4	1	Option to return data and/or pointer arrays: 0 = return only data (do not fill pointer array) 1 = return data and pointer arrays (pointer array returned even if requested day of data is not on file) 2 = return only pointer array
LPNTRS	Input	I*4	1	Length of array IPNTRS (I*2 words)
IPNTRS	Output	I*2	LPNTRS	Array containing pointers and other non-data information for all stations for data type ITYPE 2/
LPFILL	Output	I*4	1	Number of I*2 words filled in IPNTRS
LDATA	Input	I*4	1	Length of array IDATA (I*2 words) 6/
IDATA	Output	I*2	LDATA	Array containing data for all stations for data type ITYPE for day IDATE 3/
LDFILL	Output	I*4	1	Number of I*2 words filled in

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              Input/
Argument     Output    Type    Dimension    Description

                                            IDATA

NUMSTA       Output    I*4         1        Number of stations on file (there
                                            may be unused positions in arrays
                                            IPNTRS and IDATA if stations have
                                            been deleted) 4/

MSNG         Output    I*2         1        Value on file for missing data

LENDAT       Input     I*4         1        Length of array IDATES (only
                                            defined for future data types -
                                            routine RPDLFT can be used to get
                                            the minimum value of LENDAT)

IDATES       Input     I*4       LENDAT     Work array (only defined for
                                            future data or types)

ISTAT        Output    I*4         1        Status code:
                                              0 = okay
                                              1 = array IPNTRS too small -
                                                  LPNTRS I*2 words filled
                                              2 = array IDATA too small -
                                                  LDATA I*2 words filled
                                              3 = both IPNTRS and IDATA too
                                                  small - LPNTRS and LDATA
                                                  I*2 words filled
                                                  respectively
                                              4 = DATE not in file (IPNTRS
                                                  returned if IRETRN=1)
                                              5 = invalid data type
                                              6 = valid data type but no data
                                                  exists
                                              7 = IDATES too small - future
                                                  data not read
                                              8 = file read/write error
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Notes:

1/ Valid data types for data which can be read by day are:

    o   PP24 (24 hour precipitation)
    o   PPVR (less than 24 hour precipitation)
    o   MDR6 (6 hour MDR values)
    o   PPSR (stranger precipitation reports)
    o   TM24 (24 hour maximum/minimum temperature)
    o   TAVR (less than 24 hour instantaneous temperature)
    o   TF24 (forecast maximum/minimum temperature)
    o   EA24 (potential evaporation data)
    o   PPST (satellite precipitation estimates)
    o   APIG (grid point API values)
    o   PG24 (grid point 24 hour precipitation)

Position   Contents

2/ The pointer array contains different information for each data type
   which can be read by day. The various forms of the information in
   array IPNTRS for each station are as follows (see section IX.4.2A
   for a description of how pointers are marked for deleted stations):

                Position   Contents

        Data type PP24

            1   Record number of PCPN parameter record in
                        Preprocessor Parametric Data Base (stored as a
                        negative value when more than one station are at the
                        same location) 7/

            2   Location of characteristics in the array returned
                        from routine RPPCHR (stored in Preprocessor
                        Parametric Data Base)

            3   Array location of pointer information for less than
                        24 hour precipitation data on PPDB (if station does
                        not have less than 24 hour data then the value stored
                        is the record number of the general station
                        parameters on PPPDB and it is stored and returned as
                        a negative number)

            4   Precipitation correction factors and processing code
                        (see Note 4 for routine WPDCR)

            5   MDR box number (from national grid) in which station
                        is located (zero if the station cannot use MDR data)

        Data type PPVR

            1   Record number of GENL parameter record in
                        Preprocessor Parametric Data Base 7/

            2   Array location of pointer information for 24 hour
                        precipitation station on PPDB

            3   Data time interval

            4   Array location of less than 24 hour precipitation
                        data for this station

        Data type MDR - no pointers (array IPNTRS not filled)

        Data type PPSR - no pointers (array IPNTRS not filled)

        Data type TM24

            1   Record number of TEMP parameter record in
                        Preprocessor Parametric Data Base 7/

Position	Contents
2	Location in maximum temperature arrays returned from Preprocessor Parametric Data Base routine RPPMT
3	Array location of pointer information for less than 24 hour instantaneous temperature data in PPDB (zero if station does not have less than 24 hour instantaneous temperature data)
4	Correction factor for max temperature (units of tenths of DEGF)
5	Correction factor for min temperature (units of tenths of DEGF)

Data type TAVR

1	Array location of the pointer information for 24 hour maximum/minimum temperature data in the PPDB
2	Data time interval
3	Array location for less than 24 hour instantaneous temperature data for this station

Data type TF24

1	Array location of the pointer information for regular max/min temperature data in the PPDB

Data type EA24

1	Record number of PE parameter record in the Preprocessor Parametric Data Base 7/

Data type PPST - no pointers (array IPNTRS not filled)

Data type APIG - no pointers (array IPNTRS not filled)

Data type PG24 - no pointers (array IPNTRS not filled)

3/ The data array contains different information for each data type which can be read by day. The various forms of the information in array IDATA for each station are as follows:

Data type PP24

1	Encoded 24 hour precipitation value and ending hour. If the data value in the IDATA array is IVAL the 24-hour precipitation value in hundredths of an IN (PP) can be computed as follows: PP=(IVAL/10)+3000 The ending hour within 3 hours (IH) can be computed as follows:

Position   Contents

        IH=3*(((PP-3000)*10)+IABS(IVAL))
        IH is the ending hour of the observation within the
        hydrologic day (range 0 to 23 hours)
      If IH is 24 the value was estimated by the Forecast
      Program Function MAP.
      If IH is in the range 1 through 23 the value is a
      partial day total where IH is the hour of the last
      incremental value processed.

Data type PPVR

1   Less than 24 hour precipitation values (in hundredths
         of an IN)

Data type MDR

1   6 hour sums of MDR data stored by period for all MDR
         boxes (i.e., all HZ to HZ+6 MDR data first, followed
         by all HZ+6 to HZ+12 MDR data, etc. where HZ is the Z
         time hour at the start and end of the hydrologic day)

Data type PPSR

1   Y and X polar stereo graphic coordinates of station
         (in tenths)

3   Encoded precipitation value and ending hour (stored
         as described for PP24 data)

Data type TM24

1   24 hour maximum temperature (units of tenths of DEGF)

2   24 hour minimum temperature (units of tenths of DEGF)

Data type TAVR

1   Less than 24 hour instantaneous temperature values
         (units of tenths of DEGF)

Data type TF24

1   Future maximum temperature value (units of tenths of
         DEGF)

2   Future minimum temperature value (units of tenths of
         DEGF)

Data type EA24

1   Air temperature (units of tenths of DEGF)

2   Dew point temperature (units of tenths of DEGF)

Position	Contents
3	Wind (units of tenths of MPH)
4	Sky cover (tenths)
5	Percent sunshine
6	Solar radiation (units of langleys)

Data type PPST

1	Grid point address (positive if 6 hour estimates follow, negative if a 24 hour estimate follows)
2	6 hour or 24 hour satellite precipitation estimates for the day - 4 or 1 values (units of hundredths of an IN)

Data type APIG

1	Antecedent precipitation index value for each grid point address - end of day values (units of hundredths of an IN)

Data type PG24

1	24 hour precipitation values for each grid point address - estimates are negative (units of hundredths of an IN)

4/ Note that for data types MDR, PPST and PPSR the variable NUMSTA is the number of MDR boxes, number of satellite grid estimates and the number of stranger precipitation reports on file, respectively. For data types APIG and PG24 the variable NUMSTA is the number of grid points.

5/ Julian day specified is the day corresponding to the end of the 24 hour period in Z time for which data are stored.

6/ For types PPST, PG24, APIG and PPSR, LDATA must be one greater than the maximum amount of data that can be stored one day.

7/ The subroutine RPPREC can be used to read parametric records from the Preprocessor Parametric Data Base (see Section IX.3.6).