

Format of the observatory monthly means files

Each file is made of four parts:

- five (5) file header records (beginning with a space character in column 1 and ending with the vertical bar | in column 70) containing the observatory name, the observatory code, its geodetic longitude and latitude (in degrees) and its elevation (in meters above mean sea level);
- several comment header records (beginning with a space character in column 1 and # in column 2, ending with the vertical bar | in column 70), containing miscellaneous information on the data;
- one (1) data header record containing column headers TIME, X, Y, Z, L, M and R;
- the data records, each of which can be read by a Fortran statement of the form

```
READ (1, 'F8.3, 1X, F6.0, 1X, F6.0, 1X, F6.0, 1X, I1, 1X, I1, 1X, I1')
      TIME, X, Y, Z, L, M, R
```

The variables TIME, X, Y and Z are REAL*4, while L, M and R are INTEGER*2. They have the following significance:

TIME - the mean date for the values of the magnetic elements that follow;
X - geodetic north component, in nT;
Y - east component, in nT;
Z - geodetic vertical component (limb line), in nT;
L - observed element code (see Table 1);
M - means type code (see below, Section 7);
R - reference code (see below, Section 8).

Missing values of the monthly means are entered as 999999.

When TIME is a year round, the entries in the magnetic element fields represent data discontinuities caused by a change of observing site or instrument. The values given are in the sense (old value - new value). No corrections have been made to data before or after the discontinuities.

Example:

```
Station Name           Chambon La Foret
IAGA Code              CLF
Geodetic Latitude [deg] 48.017
Geodetic Longitude [deg] 2.266
Elevation [m]          145
# This data file is part of the IGP monthly means database.
# Data last verified by the observatory: November 2005
# Conditions of use: these data are for scientific/academic use.
# NOTES:
# 1936 Site differences Val Joyeux - Chambon
# 1957 New proton magnetometer
# 1968 Theodolite and absolute pier change
# 1983 Absolute pier change
TIME      X      Y      Z L M R
1936      -387   -96    278 9 9 1
1936.042  19724 -3323  41342 2 1 1
1936.124  19733 -3317  41351 2 1 1
1936.206  19739 -3313  41344 2 1 1
1936.290  19733 -3305  41355 2 1 1
```

Table 1. The observed element code (L).

L	Observed elements
1	<i>D, H, I</i>
2	<i>D, H, Z</i>
3	<i>X, Y, Z</i>
4	<i>D, I, F</i>
5	<i>D, H, F</i>
9	not applicable
0	unknown

Table 2. The means type code (M).

M	Monthly means derived from
1	data for all days
2	incomplete data (≥ 15 days)
3	very incomplete data (< 15 days)
9	not applicable
0	unknown

Table 3. The reference code (R).

R	Source of data
1	observatory
2	computed from hourly mean values downloaded from Intermagnet ftp site
3	computed from hourly mean values downloaded from WDC Copenhagen
4	jump values obtained from BGS annual means database
9	not applicable
0	unknown